



*Area 2 Source Riverbank Control
Measures
Focused Feasibility Study
Gunderson Facility
4350 NW Front Avenue
Portland, Oregon*

Prepared for:
Gunderson LLC

September 18, 2015
1935-02.022



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A handwritten signature in blue ink, appearing to read 'C. Breemer', written over a horizontal line.

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1.0 Introduction

This report presents the focused feasibility study (FFS) for source control measures at the Area 2 riverbank at Gunderson LLC's Front Avenue facility in Portland, Oregon.

1.1 Purpose and Scope

Gunderson LLC (Gunderson) owns and operates a railcar and barge manufacturing facility at an approximately 63-acre parcel of heavy-industrial-zoned land, located at 4350 NW Front Avenue, Portland, Oregon (the Facility). The Facility real property consists of the following four tax lots in Township 1 North, Range 1 East: tax lots 500 and 1700 in Section 19, and tax lots 200 and 600 in Section 20. In addition, Gunderson leases property subject to Submerged and Submersible Land Lease ML-16290/App#9953 from the State of Oregon ("Submerged Land"). The Facility has been divided into three main production areas defined as follows (from downriver to upriver): Area 1, Area 2, and the Schnitzer/ASD Yard. The Area 2 riverbank, the subject of this report, generally occupies the middle third of the Facility. The site vicinity is shown on Figure 1, and the site layout is shown on Figure 2. The Area 2 riverbank is shown in detail on Figure 3.

1.2 Regulatory Framework

A portion of the Willamette River within the City of Portland, the Portland Harbor, was added to the Superfund National Priority List in December 2000. The approximate boundaries of the Portland Harbor Study Area are from river mile (RM) 1.9 to RM 11.8. The Portland Harbor cleanup will address both upland and in-water contamination. The U.S. Environmental Protection Agency (EPA) is the lead agency for the in-water study and cleanup, and the Oregon Department of Environmental Quality (DEQ) is the lead agency for upland studies and cleanup. In the Portland Harbor, the boundary between in-water and upland areas has been defined as 13 feet (NAVD88). EPA is currently preparing the feasibility study (FS) for the Portland Harbor. The Facility is identified as DEQ Environmental Cleanup Site Information (ECSI) number 1155. This work is being completed under Voluntary Cleanup Agreement No. WMCVC-NWR-94-01 and Consent Order No. LOVC-NWR-13-02 between Gunderson and the DEQ. This FFS was prepared in accordance with the requirements set out in the DEQ-EPA Portland Harbor Joint Source Control Strategy (JSCS; DEQ, 2005).

1.3 Report Organization

This report is organized as follows:

- Section 2 presents a description of the Facility and background information on Area 2..

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- Section 3 summarizes historical investigations conducted in the vicinity of the Area 2 riverbank. This section identifies the riverbank areas that were targeted for source control measures based on previously completed source control evaluations.
 - Section 4 presents source control objectives and source control goals.
 - Section 5 describes interim source control measures that were implemented at the Facility.
 - Section 6 evaluates the effectiveness and permanence of the completed interim source control measures. Riverbank areas that have been permanently addressed as a result of the interim source control measures are not further evaluated for the FFS. This section concludes with a list of riverbank areas that warrant further source control measures.
 - The criteria that are used to evaluate source control measures are discussed in Section 7.
 - Section 8 evaluates a range of source control technologies. Those technologies that are incompatible with the Facility or the constituents in riverbank soil are eliminated from further consideration. Technologies that may be effective are described.
 - Section 9 presents a more detailed analysis and conceptual approach for source control measures.
 - Recommended source control measures are presented in Section 10.

2.0 Background

2.1 Facility Description

The following Facility description is summarized from the *Area 2 – Erodible and Riverbank Soil Source Control Evaluation* (the SCE Report; Shaw, 2011) and the *Supplemental Area 2 Riverbank Source Control Evaluation, 4350 NW Front Avenue, Portland, Oregon* (Supplemental SCE Report; Ash Creek, 2012).

The Facility covers approximately 63 acres and 4,000 lineal feet of river frontage along the west bank of the Willamette River between RM 8.5 and 9.2 (Figure 2). The Facility is bordered by Lakeside Industries on the northwest, NW Front Avenue and the Burlington Northern Santa Fe (BNSF) Railroad Rail Yard on the southwest, Georgia-Pacific Corporation on the southeast, and the Willamette River on the northeast.

As shown on Figure 2, The Facility has been divided into three main production areas defined as follows (from downriver to upriver): Area 1 (primarily tax lot 500 in Township 19), Area 2 (primarily tax lot 200 in Township 19), and the Schnitzer/ASD Yard (tax lot 600). The Area 2 riverbank, the subject of this report, generally occupies the middle third of the Facility. Area 2 is shown in detail on Figure 3.

Area 2 includes approximately 2,000 lineal feet of Willamette River frontage. The top of bank is approximately elevation 31 feet (all elevations NAVD88 unless otherwise indicated). The ordinary high water line (OHWL) is 16.6 feet NGVD (U.S. Army Corps of Engineers, 2004) at RM 9, corresponding to

20.2 feet NAVD88. The in-water portion of the Portland Harbor Site is defined as below or equal to 13 feet NAVD88 (Integral, et al., 2011).

The riverbank area along the southern third (approx.) of Area 2 is occupied by the Launchways. The Launchways consist of 32 steel “rails” that slope from the upland area to the river. The elevation at the top of the Launchways is approximately 31 feet. The rails, which are sloped approximately 7.5H:1V, are supported at the upper and lower ends by Portland cement concrete (PCC) bulkheads that are oriented parallel to the river. PCC footings, oriented perpendicular to the river, support the Launchway “rails” between the bulkhead and the top of the riverbank. The elevation of the top of the lower bulkhead is approximately 16 feet. Approximately 60 percent of the ground surface between the rails is covered with PCC. The remainder of the ground surface at the Launchways consists of a mixture of crushed rock and soil.

A dock owned by Equilon Enterprises LLC, and historically used for petroleum distribution to and from the Equilon/Shell Distribution Terminal at 3800 NW St. Helens Road (“Equilon Dock”), is located offshore of Area 2. The Equilon Dock, the terminal, and associated pipelines (which run underneath the Manufacturing Area pursuant to a permanent easement) are operated by Equilon. Approximately two acres of the riverfront in Area 2 at the Equilon Dock area are owned by Equilon.

The City of Portland owns a stormwater conveyance system that discharges to the Willamette River from an outfall (OF-18) located at the central portion of Area 2. Outfall OF-18 drains approximately 486 acres of largely industrial land upstream of the Facility. Stormwater from a small portion of the Facility also discharges through outfall OF-18, following treatment in two oil-water separators (OWS-11 and OWS-12). Gunderson’s contribution to OF-18 amounts to approximately 0.025 percent of the total discharge from that outfall.

2.2 Area 2 Historical Uses

The land surface elevations at much of Area 2 were significantly lower than the current elevations until the middle of the 20th century, when filling at Area 2 commenced and continued until the mid-1960s. The first fabrication bay was built in 1952; construction of bays 2 and 3 continued through March 1953. In approximately 1961, Ways No. 3 was constructed near the northern (downstream) end of Area 2 (other ways had been previously constructed at Area 1). By the mid-1960s, the Finishing and Rail Building and the Administration Building were constructed at the southwest side of Area 2, and the Launchways were constructed between 1967 and 1968. In the late 1960s and early 1970s, Craneways 3, 4, and 5 were constructed at the central portion of Area 2. By 1974, the Marine Paint and Blast Building, also called the “Wonder Building,” was in place on the Equilon Lease Property just downstream of the side Launchways. In summary, Area 2 has been used for manufacturing purposes since the early 1950s, when the Fabrication Bays were built. Barge construction was initiated at the Area 2 waterfront in approximately 1961, when Ways No. 3 was built.

In the late 1950s/early 1960s, Gunderson Brothers entered the rail car manufacturing business. Gunderson Brothers also continued to build various vessels until the company and facility was acquired by FMC in 1965. In the mid- to late-1970s, FMC built double-hulled, gas turbine-powered oil tankers at the Facility for Chevron. The final Chevron tanker was launched in 1977, after which time, only barges were built at the Facility. Barge building ceased at the Facility in 1984, until Gunderson LLC resumed building barges in 1993.

In 1974, FMC obtained approval from the Corps and DSL to place approximately 16,600 cubic yards of fill within and riverward of the foundation of Ways No. 2 and to place approximately 7,000 cubic yards of riprap bank protection to provide suitable foundation for operations on the fill. In 1975, FMC also obtained approval to place a 20-foot extension on City of Portland outfall OF-18. Gunderson Brothers Engineering Corporation (later changed to Gunderson Bros. Engineering Corp.), a former owner of the Facility, had previously placed a 50-foot extension on outfall OF-18.

2.3 Gunderson's Use of Area 2

Since purchasing the Facility in 1985, Gunderson has used Area 2 for fabrication of rail cars and barges, refurbishing of rail cars, and administrative functions. Marine barges are fabricated in covered buildings and structures adjacent to (west of) the Launchways. When barge modules are complete, they are transferred to the Launchways, where the modules are attached to one another by welding and using fasteners. Until recently, a seam cover for the exterior vertical welds was used to contain the abrasive blast grit at the Launchways. Currently, welded exterior seams on the hull of barge modules are prepared for painting using mechanical profiling techniques. Abrasive grit blasting may occasionally occur on the deck of the barge and in interior holds. Occasionally, abrasive grit blasting is used on the exterior of barge hulls in limited areas. Abrasive grit is captured during interior and deck treatment processes. Some painting occurs at the Launchways. The bulk of barge painting occurs at the upland area west of the Launchways before the barge modules are moved to the Launchways.

The abrasive grit that Gunderson uses at the facility is an iron-calcium-silicate complex, which consists of fused oxides of silicon, iron, calcium, and magnesium. The metals concentrations in the abrasive grit are non-detect or less than naturally-occurring concentrations in regional soil, with the exception of copper, which is present in higher concentrations.

2.4 Current and Reasonably Likely Land Uses

Based on current site use and zoning, the land at the facility is industrial and will remain in that use. Given the industrial use of the upland and waterfront, there is no substantive terrestrial ecological habitat at the Area 2 riverbank.

2.5 Previous Investigations

A number of environmental investigations have been performed at the Facility. The investigations are discussed in the SCE Report and the Supplemental SCE Report and are briefly summarized below. Figure 4 shows historical exploration locations.

2.5.1 Preliminary Site Assessment

A preliminary assessment was performed at the facility in 2002. Squier Associates (2002) subdivided Area 2 into eight subareas, based on the types of activities performed in each area. Areas near the riverbank were referred to (listed upstream to downstream) as Area 2B – the Marine Barge Area (the Launchways and adjacent upland area); Area 2G – the River Bank Area; and Area 2A – the Open Area. The PA provided a description of limited previous environmental investigations performed in Area 2. Soil samples were not collected near the riverbank at Area 2G – the River Bank Area, and Area 2A – the Open Area.

According to the PA, during a 1991 investigation, several borings (e.g., B-15/MW-15 and B-18/MW-18) were advanced at Area 2A (the Open Area) and Area 2B (the Launchways Area). These borings/monitoring wells are at least 75 feet from the riverbank and, therefore, the data from these borings/wells are not considered representative of material that could reasonably erode to the river.

A sample of blasting grit was collected north of the Marine Paint and Blast Building during the 1991 investigation. Leachable concentrations of arsenic, cadmium, chromium, lead, mercury, selenium, and silver were not detected in the blast grit.

2.5.2 Area 2- Expanded Preliminary Assessment

An expanded preliminary assessment (XPA) was performed at the facility between April and June 2003 Squier-Kleinfelder (2004a). The XPA included the collection and analysis of soil samples from 16 direct-push borings and 7 surface locations. Sixteen direct-push borings (A2GP-1 through A2GP-12) were advanced at locations approximately 50 to 200 feet from the riverbank (four of the borings were re-advanced due to encountering practical refusal, hence, borings are labeled only 1 through 12). Due to the distance from the riverbank, the data collected from the borings are not representative of soil that could realistically enter the river through erosion processes.

Surface Soil Samples. Surface soil samples A2GS-1 through A2GS-3 were collected near the Marine Paint and Blast Building. Sample A2GS-1 was collected on the riverbank, near City of Portland outfall OF-18. Sample A2GS-2 was collected at the top of the riverbank on the north side of the Marine Paint and Blast Building. Sample A2GS-3 was collected approximately 50 feet from the riverbank and therefore is not considered for this Supplemental SCE. Sample A2GS-1 exhibited concentrations of polycyclic aromatic

hydrocarbons (PAHs) and tributyltin (TBT). Sample A2GS-2 exhibited concentrations of polychlorinated biphenyls (PCBs), PAHs, and TBT.

Sandy Beaches Samples. Four grab samples (A2GS-9 through A2GS-12) were collected at “sandy beaches” at the base of the Area 2 riverbank. Sample A2GS-12 specifically targeted sediment in the vicinity of City of Portland outfall OF-18. Figures prepared by Squier-Kleinfelder (2004a) indicate that the beach samples were collected at an elevation of approximately 10 to 11 feet. Thus, the beach samples are considered “in-water” samples; these data were included in the *Draft Final Portland Harbor RI/FS, Remedial Investigation Report* (Integral, 2012). The beach samples were submitted for laboratory analysis of chemicals of interest, including petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), PCBs, selected metals, and butyltins.

PCBs (Aroclors 1254 and 1260) were detected in beach sediment samples (A2GS-9 through A2GS-12) at concentrations as high as 0.508 and 0.0975 milligrams per kilogram (mg/kg). The relatively highest PCB concentrations were detected in sample A2GS-12, adjacent to outfall OF-18. PAHs were detected in each of the beach samples, with the relatively highest total PAH concentrations detected in samples A2GS-11 and A2GS-12. No VOCs, phthalates, or phenols were detected in the sandy beach samples. Butyl tins were detected in three of the four beach samples. The relatively highest concentration of total butyl tins (1.83 mg/kg) was detected in sample A2GS-12, which was collected adjacent to outfall OF-18. A number of metals were detected in beach sediment samples. The maximum detected metals concentrations were: arsenic – 19.6 mg/kg; chromium – 59.5 mg/kg; copper – 400 mg/kg; lead – 343 mg/kg; manganese – 1,100 mg/kg; mercury – 0.25 mg/kg; and zinc – 1,140 mg/kg. The relatively highest concentrations of metals were generally detected in beach sample ASGS-10.

2.5.3 Launchways Soil Evaluation

Four surface soil samples (A2BGS-4, A2BGS-5, A2BGS-6, and A2BGS-7) and one abrasive grit sample (A2BGS-6-Grit) were collected from the Launchways area in April 2004 (Squier-Kleinfelder, 2004) and submitted for laboratory analysis of constituents of interest. The sample locations are shown on Figure 4. Low concentrations (less than 300 mg/kg) of petroleum hydrocarbons (gasoline and diesel) were detected in some of the soil samples. Oil-range hydrocarbons (3,370 mg/kg) were detected in the grit sample. Several VOCs were detected, with the relatively highest concentrations generally detected in the grit sample. Butyl tins were detected in several samples (not including the grit sample), with the relatively highest concentration of total butyl tins detected at location A2BGS-7. In general, the constituent concentrations in soil (location A2BGS-6) collected below the abrasive grit sample (A2BGS-6-Grit) were non-detect to an order of magnitude less than concentrations in the grit.

2.5.4 Pollution Prevention Activities on Marine Paint and Blast, Craneways 6, and Launchways

In August and September 2009, Gunderson implemented stormwater pollution prevention activities in the Marine Paint and Blast area, Craneways 6, and the Launchways. The pollution prevention activities consisted of improving housekeeping in the upland crane ways and building areas and surface soil removal on the Launchways. The improved housekeeping on the upland area was accomplished through the use of vacuum sweeping, manual removal of debris, cleaning of drains, vacuum cleaning of catch basins, and replacement of catch basin fabric filters. The Launchways activities were accomplished through the manual removal of soil and debris from the entirety of the Launchways, including the concrete ways.

The soil and debris were placed in roll-off containers and transported to the Waste Management Hillsboro Landfill as non-hazardous material. In total, approximately 260 tons of material were removed. Prior to disposal, representative samples of the contents of the roll-off containers were analyzed to confirm they were non-toxic and non-hazardous.

2.5.5 Draft Feasibility Study for the Portland Harbor Superfund Site

In the spring and summer of 2015, EPA released sections of the draft Feasibility Study for the Portland Harbor Superfund Site. The draft Feasibility Study presents Preliminary Remediation Goals (PRGs) for in-water and riverbank areas, and describes the remedies that EPA is considering for the site. As of the date of this report, EPA has identified six potential cleanup alternatives; however, their preferred alternative has not been identified.

3.0 Results of Riverbank Source Control Evaluation

The following sections summarize the conclusions of the SCE Report and the Supplemental SCE Report. This section is organized as follows:

- Section 3.1 describes riverbank areas where potentially erodible soil was identified.
- Section 3.2 discusses the magnitude and extent of hazardous substances in riverbank soil.
- Section 3.3 lists the riverbank locations where areas of potentially erodible soil and hazardous substance concentrations that exceed relevant screening criteria are co-located. These are the areas that were targeted for riverbank source control efforts.

3.1 Potential Bank Erosion Areas

Areas of potential riverbank erosion that were identified in the SCE Report and the Supplemental SCE Report are listed below and shown on Figure 5.

-
- Source Control Area 1 - The soils below and in front of (north) the Launchways lower bulkhead. These soils are in the interval between approximately 15 and 13 feet. The primary erosion mechanism at this area appears to be wave action.
 - Source Control Area 2 - The Launchways in the interval between approximately 16 and 31 feet. Stormwater runoff (from direct precipitation on the Launchways) and wave action (during periods of elevated river stage) are potential sources of erosion in unpaved portions of the Launchways.
 - Source Control Area 3 - The Marine Paint and Blast Building (MPBB) Area. The affected interval in this area is between approximately 30 and 15 feet. The primary historical erosion mechanism at this area appears to be overland flow.
 - Source Control Area 4 - A limited portion of the upper riverbank adjacent to the Equillon dock. This area is approximately 30 feet wide and occupies the interval between approximately 34 and 20 feet.
 - Source Control Area 5 - An area approximately 30 feet wide that occupies the interval between approximately 20 and 34 feet, near the southeast corner of the Ways 2 building.

Interim source control measures (ISCMs) have been implemented at Source Control Areas 1 through 4. The ISCMs are discussed in Section 5. Therefore, the potential for erosion has been eliminated or significantly reduced at Source Control Areas 1 through 4.

3.2 Constituent Concentrations in Riverbank Soil

For the SCE, the risks that erodible riverbank soil poses to the Willamette River were evaluated by comparing constituent concentrations in riverbank soil to JSCS screening level values (SLVs). Soil constituents that were detected at concentrations that exceeded SLVs and were detected at elevated concentrations in nearshore sediment were designated a potential risk to the Willamette River. The SCE screening results are summarized below.

Metals, PAHs, PCBs, phthalates, dioxins/furans, pesticides, and TBT were detected in riverbank soils at concentrations that exceed SLVs. Figure 4 shows the riverbank soil sample locations. As shown on Figures in Appendix A, in each of the general areas where potentially erodible soil has been identified (listed in Section 3.1), the concentrations of one or more hazardous substances exceed JSCS SLVs. However, PAHs, phthalates, pesticides (with the exception of dieldrin), and dioxins/furans were not detected at elevated concentrations in nearshore sediment, and therefore, were not identified as a significant threat to the Willamette River. Consequently, only metals, PCBs, TBT, and dieldrin were identified as COCs for riverbank source control.

Metals. Arsenic, chromium, copper, lead, manganese, mercury, silver, and zinc were detected above background concentrations and above soil SLVs. Lead was most frequently detected above the SLV (76 of

84 samples). The other metals were detected above the SLVs less frequently. The exceedance factor (EF; concentration divided by SLV) for lead in riverbank soil was 88 or less. The maximum exceedance ratios for other metals in riverbank soil ranged between 2 and 83. The relatively highest concentrations of arsenic, copper, lead, manganese, mercury, and zinc in riverbank soil were detected at location S2-16, in the central portion of the Launchways.

Total PCBs. Aroclors 1248, 1254, and 1260 were detected in soil samples collected in riverbank soil. Soil samples collected between the surface and 5 feet bgs exhibited exceedance factors ranging between approximately 12 and 250. Samples S2-10, S2-14, S2-19, and Vector 2.13 (shown on Figure 4) exhibited the relatively highest concentrations of total PCBs. Higher concentrations of PCBs were detected in deeper soil samples, with a sample collected from Vector 2.7 (collected approximately 20 to 25 feet below the ground surface) exhibiting an EF of 2,215.

TBT. TBT was detected in riverbank soil. The highest TBT EF in Launchways surface soil (0 to 5 feet) was 64 (sample A2GS-7); other samples in that area exhibited EFs ranging between 5 and 12. Downstream of the Launchways, TBT EFs in surface soil ranged between 2 and 52, with the relatively highest EF (52) detected in sample S2-10.

Dieldrin. Dieldrin has been detected in one soil sample each at the northern margin of the Launchways (sample Vector 2.10) and north of the MPBB (sample Vector 2.8). The surface soil sample collected from the northern margin of the Launchways (sample Vector 2.10) exhibited an EF of 193.

3.2.1 Riverbank PRGs

In summer 2015, as part of the draft Feasibility Study, EPA released draft PRGs for riverbank soil. EPA considers the PRGs to be protective of human and ecological health in the Willamette River. The PRG concentrations are equal to or higher than the JSCS screening levels, with the following exceptions: Aldrin, arsenic, bis(2-ethylhexyl)phthalate, hexachlorobenzene, and 1,2,3,4,7,8-HxCDF.

To evaluate whether the draft PRGs affect previous SCE conclusions, the COC concentrations were compared to the PRGs for riverbank soil. The range of PRG exceedance factors (concentration/PRG) for previously identified COCs are listed below:

- Arsenic: 14 - 194
- Chromium: 1 - 1.8
- Copper: 11 - 35
- Lead: 1 - 12
- Manganese: No PRG

-
- Mercury: 0.1 – 0.4
 - Silver: No PRG
 - Zinc: 5 - 17
 - PCBs: 6 - 96
 - TBT: 6 - 74
 - Dieldrin: 17 - 22

The concentrations of COCs exceed PRGs, with the exception of manganese and silver, for which PRGs have not been established, and mercury, where the PRG exceeds the JSCS SLV. This comparison indicates that the list of COC developed based on SLV screening remains generally applicable.

3.3 Source Control Areas

In summary, hazardous substances have been detected at concentrations that exceed screening criteria in each of the riverbank areas where potentially erodible soil has been identified. These areas, which are described in Section 3.1, constitute the Locality of Facility for riverbank source control measures.

4.0 Source Control Objective

This section describes the objective of source control measures and the criteria that are used to evaluate whether source control goals have been met.

4.1 Source Control Objective

The Source Control Objective (SCO) for the Area 2 riverbank soil is to prevent erosion of soil into the river at concentrations that could result in sediment concentrations above Portland Harbor cleanup levels. It is assumed that the SCO will be achieved by preventing soil that contains COCs at concentrations above the SCG concentrations from eroding to the river.

4.2 Source Control Goal

EPA recently issued draft PRGs for riverbank soil. The draft PRGs consider the applicable or relevant and appropriate requirements (ARARs) and beneficial land and water uses in the Willamette River. Erodible riverbank soil that contains chemical concentrations less than the draft PRGs is considered protective of the sediment and water quality in the Willamette River, for both human end ecological receptors. Therefore, the draft PRGs are the Source Control Goal (SCG) concentrations. The SCGs for COCs are listed in Table 1.

According to the DEQ/EPA Joint Source Control Strategy, “the overarching goal of the JSCS is to identify, evaluate, and control sources of contamination that may reach the Willamette River”. Under the JSCS guidance, source control decisions are made based on the threat that upland contaminant sources pose to the river. The guidance specifically directs users to evaluate risks based on comparisons to criteria that were developed for protection of human and ecological receptors in the river. An evaluation of the risks to upland receptors is not included within the scope of the guidance.

However, DEQ has requested that the FFS include an evaluation of the risk that COCs in riverbank source control areas pose to people and terrestrial receptors that may be exposed to riverbank soil. Therefore, this FFS includes that evaluation. The upland portion of the riverbank at areas targeted for source control measures is used for industrial purposes and is devoid of ecological habitat and receptors. Human receptors at upland areas are limited to workers at the Gunderson facility. Based on this exposure scenario, DEQ occupational RBCs are also SCGs for upland soil. Where naturally occurring background concentrations of metals exceed RBCs, the background concentration is the SCG.

5.0 Interim Source Control Measures

Subsequent to completion of the SCE and Supplemental SCE, ISCMs were implemented to address most of the potential erosion areas listed in Section 3.1. The ISCMs were completed in general accordance with *Revised Area 2 and Schnitzer ASD Yard Riverbank Interim Source Control Measures Work Plan* (Apex, 2013) and subsequent DEQ communications, during two phases of work. The first phase occurred between August and November, 2013. The second phase occurred during the winter and spring 2014/2015. Monitoring and maintenance have been ongoing since the ISCMs were implemented.

5.1 ISCMs – Initial Phase

The ISCMs that were completed during the first phase of work were described in detail in *Riverbank Interim Source Control Measures Report*, dated March 21, 2014, and are summarized below.

5.1.1 Source Control Areas 1 and 2 - Launchways

ISCMs that were implemented at the Launchways include bulkhead armoring and erosion controls. These ISCMs are described below. Figure 6 depicts ISCM details at the Launchways.

5.1.1.1 Bulkhead Armoring

A temporary wall composed of interlocking sandbags, ranging in weight between approximately 50 and 3,000 pounds (up to 1 cubic yard of sand), and connected with interlocking metal retaining clips, was placed along the base of the riverward side of the lower bulkhead in 2011. The sandbags form a protective barrier that is approximately 4 feet high. The sandbag system has sufficient mass and interlocking strength to

resist wave energy and prevent erosion of soil beneath the Launchways bulkhead. The sandbags are covered with black geotextile fabric that is permanently affixed to the top of the lower bulkhead wall. The geotextile fabric prevents degradation of the bags due to ultraviolet light. The placement of sandbags has effectively stopped erosion at the base of the lower bulkhead.

The bulkhead armoring system was not modified during the interim SCMs; however, a monitoring program designed to ensure the long-term integrity of the interim SCMs (including the bulkhead armoring system), was established. Monitoring results are presented to DEQ on a bi-monthly schedule.

5.1.1.2 Launchways Erosion Control

Overall, the Launchways slope toward the river at a slope of approximately 5H:1V. Approximately 40 percent of the ground surface between the Launchways is covered by PCC; the remainder of that area consists of a mixture of crushed rock and soil. To reduce the potential for soil erosion at the Launchways, two wattle systems were installed between each set of Launchways, with the exception of areas between Launchways that are entirely covered by PCC. The two-wattle system includes a wattle approximately 12 feet southwest (upland) of the lower bulkhead and a second wattle approximately 10 feet farther in the upland direction. The double wattle system provides redundancy and reduces the potential for erosion of soil to the river. In total, 64 wattles were installed in the Launchways at the locations shown on Figure 6. The wattles significantly reduce the potential for eroded soil to migrate from the Launchways to the Willamette River.

5.1.2 Source Control Area 3 - Marine Paint and Blast Building Area

ISCMS that were implemented at the riverbank near the MPBB include riverbank rock replacement, bioengineering, and surface drainage improvements. Each of these ISCMS is described below. Figures 7 and 8 depict ISCM details at the MPBB riverbank

5.1.2.1 Riverbank Rock Replacement

Rock replacement was performed along a portion of the riverbank above ordinary high water. Small amounts of surficial soil were removed to facilitate this, but approximately 95% of the material in this area was rock. The smaller, irregularly shaped rock was replaced with 3" to 4" thick flat rock, on average 2' wide and 18" deep. The flat rock was stacked in a manner that resulted in slightly lower angled slope. The base of the new rock was installed on a flat bench area, and overlying rock was sloped back and away from the river from that point. The base of the flat rock was two rocks wide in (plan view) tapering to one rock thick at about 4' below the top of the riverbank. The height of the stacked flat rock varies. The stacked flat rock is approximately six feet tall for approximately 120' of riverbank and three to four feet tall for the remaining 250' (approximately) of riverbank around the MPBB towards and past Outfall 18. The stacked rock terminates where extensive riprap exists behind the Equilon Dock. The thickness of the new rock is approximately 4 feet at the lower one to three feet of the armored area. The upper 2 to 6 feet of stacked flat rock is approximately 3 feet thick. To reinforce the stacked flat rock, and further reduce the potential for

underlying rock and soil to erode: (1) geogrid material was placed on the ground surface below the new rock and over every fourth course of stacked rock; (2) permeable geotextile was installed over the geogrid and wrapped up over the newly exposed riverbank surface to the top of the river bank; and (3) clean imported gravel/sand was swept into voids between the rock.

5.1.2.2 Bioengineering

A bioengineered slope protection system was installed above the stacked rock. The system consists of two to five layers of imported soil encased in two wraps of coir fabric, with Columbia Willow and Pacific Willow planted between each soil layer. Approximately 1,500 willows were planted at the riverbank. Kinnikinnick was planted at the top of the riverbank. The coir fabric lasts approximately five to seven years. During this period, root networks will be integrated into the fabric, forming a stable complex mass that works to protect the bank from erosion. The established vegetation is expected to provide sufficient bank stabilization after the coir fabric degrades.

5.1.2.3 Surface Drainage Improvements

Surface drainage improvements were implemented on the northeast and northwest sides of the MPBB. The purpose of the surface drainage improvements was to reduce the amount of stormwater that discharges over the riverbank and, thereby, reduce the potential for riverbank erosion. Completed surface drainage improvements are listed below.

Improvement of Soil Infiltration Capacity

Approximately two feet of soil were excavated from the area northwest of the MPBB and disposed of off-site. The upper eight inches of soil were removed from the area northeast of the MPBB building, between a section of railroad tracks. Railroad ties and underlying ballast rock prevented deeper excavation. Geotextile was placed over the excavated soil surface to serve as a demarcation layer between underlying soil and clean imported fill. The area northwest of the MPBB was filled with imported 1.5-inch drain rock to within approximately 6 inches of the ground surface. Another layer of geotextile was placed on top of the drain rock. The upper layer of geotextile was covered by a 6-inch layer of imported ¼- to ¾-inch crushed rock, which functions as a working surface. The area northeast of the MPBB, between the railroad tracks, was filled with imported 1.5-inch drain rock.

Control of Roof Drainage from MPBB

Drainage from approximately 5,000 square feet (sf) of the MPBB roof discharges to the ground surface at the northwest side of the MPBB, via a downspout on that side of the building. The downspout was modified to discharge over a wide area of drain rock, resulting in infiltration of the stormwater runoff. In the past, under heavy rain conditions, there could be flow from the roof drain to the riverbank along a 5 to 10-foot long portion of the riverbank.

Asphalt-Concrete Improvements

Prior to the ISCMs, the asphalt-concrete (AC) surface in some areas north of the MPBB sloped toward the riverbank. To reduce the potential for discharge from the AC surface to the riverbank, an AC overlay was installed at the area shown on Figure 7. The thickness of the AC overlay ranged between 4 and 18 inches, depending on the thickness necessary to redirect stormwater runoff. The AC overlay directs stormwater runoff away from the steep riverbank, toward the unpaved area northwest of the MPBB and northwest of the Launchways where the stormwater naturally infiltrates or runs off the more gently sloped riverbank.

Riverbank North of MPBB

Prior to implementation of the SCMs, stormwater from some areas northeast of the MPBB discharged to an unpaved area northwest of the Launchways. This area is shown on Figure 7. Historical data (Shaw, 2011a) indicate that shallow soils in this area contain concentrations of some hazardous constituents. The AC overlay (described above) redirected some stormwater runoff away from the riverbank and towards the unpaved area northwest of the Launchways. To reduce the risk of erosion in this area and to reduce risk to human and ecological receptors, approximately two feet of soil were excavated, geotextile was placed over the excavated ground surface, and imported crushed rock and boulders (12 to 36 inches in diameter) were installed. Columbia Willow and Pacific Willow trees were planted between the boulders to maintain soil stability and, improve facility aesthetics.

5.2 ISCMs – Second Phase

The second phase of ISCMs was performed in the winter and spring of 2014/2015. ISCMs completed during the second phase of work have been described in routine bi-monthly progress reports and oral communications with DEQ, but have not been otherwise reported. This section describes the second phase of ISCMs.

5.2.1 Source Control Area 4 - Equilon Dock

Approximately 420 square feet of riverbank area was previously identified as having less armoring than surrounding areas. Imported 24- to 36-inch diameter rock was installed in this area in February 2015. Prior to installation of the rock, a layer of non-woven geotextile was installed over the ground surface. The rock was placed using an excavator that was staged at the top of the riverbank. Following completion of the work, as shown on Figure 9, Source Control Area 4 was covered by 24 to 36-inch diameter rock.

5.2.2 Source Control Area 3 - Marine Paint and Blast Building Area

During the second phase of ISCMs, the stacked riverbank rock and bioengineering area was extended approximately 30 feet west from the previously completed stacked rock/bioengineering area and surface drainage improvements were implemented at areas west of the MPBB. These ISCMs are described below and depicted on Figures 7 and 8.

5.2.2.1 Riverbank Rock Replacement

Stacked rock was placed as described in Section 5.1.2.1. The base of the rock was established approximately eight to ten feet below the top of the riverbank and the total height of the stacked flat rock is approximately six feet. Two, three-point composite soil samples were collected from riverbank soil beneath the stacked rock to characterize soil in that area. The sample locations are shown on Figure 7. Analytical data are included in Appendix B.

5.2.2.2 Bioengineering

Bioengineering, similar to that described in Section 5.1.2.2, was performed above the stacked rock described in Section 5.2.2.1. The bioengineering system consists of an approximately two-foot thick layer of imported soil encased in two wraps of coir fabric. The soil was tested for constituents of interest prior to placement at the riverbank. Soil analytical data are included in Appendix C. Willows were planted in the imported soil at approximately one-foot intervals. Kinnikinnick was planted at the top of the riverbank.

5.2.2.3 Surface Drainage Improvements

Approximately 12,000 square feet of AC pavement were installed in the area shown on Figure 7. Previously, the surface of this area consisted mainly of older AC pavement with a slope towards the river. The asphalt concrete pavement reduces stormwater turbidity and directs stormwater to the OF-136 stormwater conveyance system, away from the riverbank.

6.0 Re-Evaluation of Areas Warranting Source Control

The purpose of the FFS is to select a preferred remedy for addressing riverbank areas that may pose a threat to the Willamette River. To pose a threat to the Willamette River, riverbank areas must meet two criteria: (1) potentially erodible soil must be present; and (2) potentially erodible soil must contain hazardous substances at concentrations that exceed SCGs for the Willamette River. The potential for soil erosion has been eliminated in areas with steeper riverbanks through the implementation of ISCMs. Where the ISCMs amount to permanent remedies that have essentially eliminated erosion risks, additional SCMs are not warranted. Section 6.1 identifies source control areas where permanent remedies are in place and further SCMs are unnecessary; Section 6.2 discusses source control areas that will be addressed as part of the planned in-water remedy; and Section 6.3 discusses source control areas that have not been addressed or have been addressed using temporary measures.

6.1 Completed Source Control Measures

ISCMs completed at the following areas offer permanent protection from erosion:

- Source Control Area 3 – MPBB Riverbank. The surficial soil in this area is now protected by a multi-component system consisting of rock, geomembrane, geotextile fabric with bioengineering

along the upper zone to increase habitat benefit.. Areas with limited sources of overland stormwater flow were addressed by re-routing stormwater and facilitating stormwater infiltration.

- Source Control Area 4 - Equilion Dock. Previously unarmored surficial soil in this area is now protected by a multi-component armoring system, consisting of geotextile and rock armoring.

The armoring and bioengineering offer permanent erosion protection and prevent workers from contacting underlying soil. Because the ISCMs have permanently addressed the erosion and worker health risks at each of these areas, additional SCMs are not necessary. Therefore, these areas are not further evaluated.

6.2 Source Control Area To Be Addressed During the In-Water Remedy

Source Control Area 1 – Launchways Bulkhead – Soil beneath the Launchways bulkhead, approximately in the interval between elevation 15 and 13 feet was previously identified as potentially erodible. In response, as discussed in Section 5.1.1.1, Gunderson installed a bulkhead armoring system and instituted an ongoing monitoring program. This system prevents erosion at the bulkhead and, with ongoing maintenance, could be a permanent remedy.

Source Control Area 1 abuts the elevation (13 feet) that forms the boundary between the EPA in-water water study and cleanup area, and the upland area; therefore, this area will be addressed as part of the in-water remedy. In the Draft Feasibility Study for the Portland Harbor, at Source Control Area 1, EPA has proposed a combination of dredging and armored capping for all of the remedial alternatives currently under consideration. The draft design for an armored cap at the Launchways area consists of a three layer system consisting of (from bottom to top): (1) a 12-inch layer of sand mixed with 20 percent activated carbon, (2) 18 inches of sand, and (3) 6 inches of armor stone.

Under all of the alternatives currently under EPA consideration, an armored cap will be installed at Source Control Area 1. This cap is expected encompass sediment below 13 feet and in the small vertical interval (one to two feet) between the Study Area boundary and the base of the lower bulkhead. Because EPA has already identified a range of alternatives that will effectively address soil at Source Control Area 1, this area is not further evaluated herein.

6.3 Source Control Measures Requiring Evaluation

ISCMs are incomplete at the following areas:

- Source Control Area 2 - The Launchways. A number of interim measures have been implemented at the Launchways, including installation of 64 wattle systems and ongoing implementation of Best Management Practices (e.g., inspections, sweeping, containment of abrasives). These measures significantly reduce the potential for stormwater runoff to convey hazardous substances in soil to the river; however, the erosion prevention measures require ongoing maintenance and

replacement, and therefore, are not considered permanent measures. Additionally, soil in Source Control Area 2 – The Launchways contains arsenic at concentrations that exceed screening levels for worker protection. The ISCMs do not address the potential risk to human health.

- Source Control Area 5 - Ways 2 Building. SCMs have not been implemented to address the riverbank area near the Ways 2 Building. Soil in this area has been identified as potentially erodible. Additionally, soil samples indicate that arsenic concentrations in this area exceed occupational screening levels.

Permanent SCMs are evaluated in Section 7 through 9 for Source Control Areas 2 and 5.

6.4 Hot Spot Evaluation

Soil hot spot concentrations are defined as a multiplier applied to the acceptable risk-based concentration (the multiplier is 100 for human carcinogens and 10 for ecological and human non-carcinogens). Under current DEQ source control policy, for upland soil, hot spot concentrations should be established for terrestrial ecological receptors (where suitable habitat is present) and appropriate human receptors. Aquatic screening criteria are not used for establishing hot spot concentrations. The Facility is an operating industrial facility; therefore, ecological habitat is absent from upland portions of the Area 2 riverbank. Human receptors are limited to workers in occupational exposure scenarios. Therefore, based on current and reasonably likely land uses, receptors for which hot spot concentrations must be established are limited to occupational receptors. Table 2 lists riverbank soil hot spot concentrations.

COC concentrations in riverbank soil were compared to hot spot concentrations. No COC concentrations exceeded hot spot concentrations with the exception of arsenic in one soil sample (S2-2 – 580 mg/kg). As shown on Figure 4, sample S2-2 was collected at an area of the Area 2 riverbank where potentially erodible soil is absent; therefore, the hot spot exceedance is not relevant for this FFS. Soil analytical data for the Area 2 riverbank were previously compiled in the Supplemental SCE Report. Copies of those tables are included in Appendix D.

Based on the absence of hot spot concentrations in source control areas, hot spots are not further evaluated in this report.

7.0 SCM Evaluation Criteria

This section discusses the evaluation criteria that are used to select preferred SCMs for the facility.

7.1 Evaluation Criteria

The riverbank source control alternatives were evaluated using the criteria listed in JSCS for Source Control Alternative Evaluation and Design. These criteria are: (1) effectiveness, (2) implementability, and (3) relative cost. Each criterion is described below.

7.1.1 Effectiveness

This criterion includes both the long-term effectiveness of the technology to prevent soils from eroding into the river and the feasibility of minimizing short-term risk (i.e., implementation risk) during construction, as further described below.

- **Long-Term Effectiveness.** The effectiveness criterion considers the ability of an alternative to provide long-term environmental protection. An effective technology must be able to withstand scour and erosion that could destabilize the bank.
- **Implementation Risk.** The objective of this criterion is to minimize short-term risks to workers and the environment associated with construction activities. Impacted soil may be exposed by re-grading certain parts of the bank, creating a risk of erosion into the aquatic environment. Although such impacts should be avoided to the extent practicable, in some cases it may be necessary to tolerate some amount of short-term environmental risk to gain long-term environmental protection. Engineering controls (e.g., silt fences) are used in these cases to reduce implementation risk.

7.1.2 Implementability

The implementability criterion considers a number of factors that affect the practicability of constructing a particular alternative. These factors include the following.

- **Operational Constraints.** Upland and waterside operations must not be compromised by the technology. For example, the integrity of adjacent structures and rights of way must not be undermined by excessive removal of the bank.
- **Consistency with Adjacent Remedial Actions.** The proposed alternative must be consistent with the adjacent upland remedies, to the extent the design of these final remedies can be anticipated, as well as any proposed in-water remedial actions associated with the Portland Harbor Superfund site.
- **Permitting.** This factor considers the ease of obtaining permits for the source control alternative, or the ease of fulfilling the substantive requirements of permits exempted under the Comprehensive Environmental Response, Compensation, and Liability Act and/or DEQ rules.

-
- **Consistency with Current and Future Land Use.** A source control alternative should not conflict with existing or anticipated future land use, especially water-dependent land use. For example, heavy industrial waterfront usage may conflict with the use of shallow, bioengineered slopes and wide riparian buffer zones.
 - **Sustainability.** Sustainability considers the overall use of resources associated with a technology including energy and natural resources used to manufacture, install, and maintain the elements of the technology, as well as carbon dioxide emissions.

7.1.3 Cost

The relative cost to implement a source control alternative is developed at a level sufficient to compare the relative costs.

8.0 Technology Evaluation and Source Control Alternatives Development

This section describes and evaluates the source control technologies applicable to SCMs for the riverbank.

8.1 Screening of General Approaches

General approaches for SCMs at the Area 2 riverbank include:

- No Action;
- Institutional Controls;
- Excavation and Off-Site Disposal;
- Containment/Engineering Controls;
- Biological Treatment; and
- Physical/Chemical/Thermal Treatment.

No Action. A detailed evaluation of the need for source control was prepared in the SCE/Supplemental SCE (Shaw 2011 and Ash Creek 2012). Information presented in those documents indicates that source control is appropriate at some areas of the Area 2 riverbank. Therefore, the No Action alternative was not retained.

Institutional Controls. Institutional Controls consist of physical or legal barriers to prevent access to areas of concern. Institutional Controls would not prevent erosion of soil to surface water so were eliminated from further consideration.

Removal. Removal, as a standalone remedy, is not a feasible source control remedy for the Facility because:

- COCs are present at significant depths in some riverbank areas (e.g., PCBs at 20 to 25 feet bgs at location "Vector 2.7") and excavation of those materials is not practicable.
- Removal of soil containing COC would structurally undermine key components of the Facility, such as the Launchways and the Ways 2 Building.
- Any removal alternative that results in incomplete removal of COCs will require containment/engineering controls.

While removal is not a suitable standalone remedy, it may be a component of source control measures that include containment and engineering controls. Therefore, removal measures are considered in combination with other approaches.

Containment/Engineering Controls. Technologies in this category include capping and stabilization. These technologies prevent direct contact with (for terrestrial receptors) and/or erosion of surface soils. These technologies would be included with other approaches, but conceptually, are capable of achieving the project objectives without other technologies. The studies completed as part of the SCE/Supplemental SCE demonstrate that many areas of the riverbank are stable and that well-established riprap and other armoring are successful in preventing surface erosion. Therefore, stabilization technologies were retained for further consideration.

Biological Treatment. Some of the source control COCs, such as metals, are not amenable to biological treatment under normal circumstances. Furthermore, biological treatment can take time during which the soils would be susceptible to erosion. For these reasons, biological treatment was eliminated from further consideration.

Physical/Chemical/Thermal Treatment. Chemical and thermal treatment are not compatible with some of the source control COCs. Physical treatment (e.g., solidification) could achieve the project objectives at high relative cost, but would not be compatible with City of Portland Greenway standards (the resulting condition would not be suitable for planting native species). Therefore, physical/chemical/thermal treatments were eliminated from further consideration.

Summary of Retained General Approaches. For the reasons outlined above, the following general approaches were retained for further evaluation:

- Removal; and
- Containment/Engineering Controls.

Section 8.2 presents a more detailed discussion of containment/engineering control alternatives. Removal is integrated into containment/engineering alternatives where necessary.

8.2 Description of Containment/Engineering Controls

Five bank stabilization technologies were considered for application at Source Control Areas 2 and 5: (1) riprap armoring; (2) geosynthetic cellular confinement system (CCS); (3) aggregate containment, (4) Portland cement concrete (PCC) containment; and (5) bioengineering. Removal would be a component of all of the alternatives (to prepare the surface for installation of containment systems). Under all of the containment/engineering control alternatives, impacted soil would be exposed while preparing soil for installation of a containment layer, creating a short-term risk of erosion into the aquatic environment. These short term risks can be mitigated using engineering controls (e.g., silt fences).

8.2.1 Riprap Armoring

Traditional riprap armoring consists of a blanket of rock material sized to resist river currents and wave action. It is a flexible solution that is able to fit the slope and shape of an existing shoreline, such as riverbank at Source Control Area 5 – Ways 2 Building. Riprap armoring is tolerant to changes in subsurface soils due to settlement and other forces. In general, riprap slopes can be maintained at a steeper grade than re-vegetated soil slopes and also provide resistance against surface erosion from water flow. Riprap armoring is extremely durable in the long-term and provides high resistance to propeller wash and vessel wakes associated with a working waterfront, as well as overland flow and wind erosion. In some cases, vegetation can be planted in the riprap to further stabilize the slope and enhance the slope appearance and habitat. While riprap placement at Source Control Area 5 – Ways 2 Building would be effective at addressing erosion issues, it would be necessary to place riprap below OHWL and it is unclear if permits would be issued for this solution. Riprap is not a feasible approach for Source Control Area 2 – Launchways because the Launchways are a working area, used to stage equipment and to access vessels.

8.2.2 Geosynthetic Cellular Confinement Systems

Geosynthetic cellular confinement systems (CCSs) combine an engineered slope stabilization technology with native vegetation that enhances habitat and long-term slope stability. CCSs are typically three-dimensional structures, made of polyethylene, that form open-ended cylinders 3 to 12 inches deep. Each cell acts as a small dam that allows water to pass over the top while holding in place the soil contained inside the cell. Vegetation may be planted in the upper bank cells. Another form of CCS consists of sandbags with open weave materials that allow for vegetation to be established in the sand. In addition to aesthetics, the vegetation also helps to reduce the potential for erosion as the plants serve as an anchor. Because the walls may be perforated, roots are allowed to grow through the system, further enhancing the erosion protection. The perforations also allow lateral drainage through the system, enhancing performance of the CCS in submerged conditions. On the lower portion of Source Control Area 5 – Ways 2 Building, the

cells would be filled with gravel to resist the forces of waves and currents and to ensure that return flow is not prohibited.

The CCS option can be implemented in two ways: on a prepared slope to create a stabilized surface that can be vegetated; or in horizontal layers to create a mechanically stabilized earth (MSE) wall with a face that can be vegetated. At Source Control Area 2, where the existing slope is relatively steep, MSE wall segments would likely be necessary. As such, this solution would require extensive filling into the river channel that may not be permissible. CCS systems would not be compatible with Source Control Area 5 – Launchways because this is a working area.

8.2.3 Aggregate Soil Containment - Launchways

Source Control Area 2- Launchways is constructed at slopes on the order of 6:1 (horizontal:vertical). Soil is exposed in approximately 60% of the Launchways and could be subject to erosion via surface water runoff or current forces during high water. The Launchways constitute a working area, subject to frequent and ongoing activities. Vegetation is generally absent from the Launchways. The Launchways do not provide habitat for aquatic or terrestrial receptors.

Soil containment in the Launchways, above the lower bulkhead, using clean imported aggregate, would maintain a measureable level of protection. The aggregate layer would be separated from underlying impacted material through use of a separation geotextile layer. Installation of the aggregate cap would require soil removal and grading, preparation of the subgrade, placement of the geotextile, and placement and grading of the aggregate layer.

Conceptually, the Launchways Aggregate Soil Containment alternative could be performed in stages to accommodate facility operations and to manage costs. For example, one-third of the affected area could be treated each year for three years.

Based on the existing slope gradient for the Launchways area (less than 17 percent) we evaluated the bed shear associated with direct rainfall and runoff. In evaluating this scenario, the following formula represents bed shear associated with laminar flow over a sloping surface.

$$\tau_d = \gamma(dS)$$

Where: τ_d = bed shear in psf

γ = unit weight of water, 62.4 pcf

d = maximum depth of flow in feet

S = average bed slope

Given the limited contributory area for flow across the ways, we assumed a conservative flow depth of one half inch (0.042 feet). Under that scenario, the bed shear is calculated at 0.4 psf. This proves to be the

critical case since based on high flow model developed for the Portland Harbor (Integral Consulting et al., 2011), the bed shear values associated with inundation of the Willamette River is less than 0.01 psf (0.4 N/m²).

For the design of rock lined channels, the relationship between bed shear and aggregate gradation is as follows:

$$\tau_d = 4.0d_{50}$$

Where: τ_d = bed shear in psf

d_{50} = mean diameter stone size in feet

The FHWA guidance recommends using factors of safety up to 1.5. Using the calculated bed shear of 0.6 psf (reflecting a factor of safety of 1.5) the calculated mean diameter stone size is 0.15 feet (1.8 inches).

The analysis presented above is based on the ability of rounded sands and gravels to resist erosion. Using crushed rock will provide additional protection not accounted for in the model. Based on our analysis, 4 inch minus crushed rock would be suitable for an aggregate containment layer in the Launchways.

For ease of placement and grading, it is typically best to maintain a layer at twice the maximum particle size. As such, the total recommended thickness of the aggregate containment layer (consisting of 4 inch minus rock) would be 8 inches.

The aggregate cap would require ongoing monitoring to ensure the integrity of the cap. If soil or other materials containing hazardous substances accumulate in the aggregate cap, it would be necessary to clean or replace the cap.

The aggregate cap was not considered for Source Control Area 5 – Ways 2 Building, because the bank slope in that area is too steep for aggregate soil containment.

8.2.4 Portland Cement Concrete Soil Containment

This technology is similar to the aggregate soil containment technology described in Section 8.2.3; however, under this alternative, Portland cement concrete would be the soil containment media. PCC containment in the Launchways, above the lower bulkhead, would prevent stormwater runoff and Willamette River water from eroding soil. PCC containment offers the benefit of a functional working surface and few ongoing maintenance requirements. Installation of the PCC cap would require soil removal and grading, preparation of the subgrade and construction of the PCC cap. Impacted soil may be exposed by preparing Launchways soil for installation of a containment layer, creating a short-term risk of erosion into the aquatic environment; however, these risks can be mitigated using engineering controls (e.g., silt fences). Some impacted soil would be removed and disposed of off-site to prepare for installation of the PCC cap. Conceptually, the

PCC containment alternative could be performed in stages to accommodate facility operations and to manage costs. For example, one-third of the affected area could be treated each year for three years.

The PCC cap was not considered for Source Control Area 5 – Ways 2 Building, because the bank slope in that area is too steep for PCC soil containment and installation of the PCC below the OHWL may not be permissible.

8.2.5 Bioengineering

Bioengineering is the combination of biological, mechanical, and ecological methods to control erosion and stabilize soil through the use of vegetation or a combination of vegetation and construction materials. Both living and nonliving plants can be used. Nonliving plants are used as construction materials, similar to engineered materials. Planted vegetation controls erosion and serves as good wildlife and fisheries habitat in riparian systems. Bioengineering has been effective for controlling erosion at some Facility riverbank areas (e.g., Source Control Area 3 - The MPBB Area). The City of Portland describes bioengineering as “the ideal measures to use on streambanks and upland slope areas” (City of Portland 2008).

Bioengineering, consisting of carefully installed coir fabric and native vegetation, could be implemented at Source Control Area 5 – Ways 2 Building. Coir fabric would be carefully staked to the ground surface and cut around hard surfaces (e.g., steel or PCC) to prevent tenting and to allow adequate sunlight to reach immature vegetation. Live stakes, consisting of willow and/or other appropriate native plants, would be planted through the coir fabric. Root and plant structures would develop an interlocking surface minimizing erosion risk. The effectiveness of bioengineering is contingent on the establishment of a suitably dense network of vegetation. In the short term, this alternative would require some maintenance (e.g., irrigation, removal of invasive species, and replacement of some vegetation). The work would be limited to the area above OHWL; therefore, in-water permitting would not be required. Short term implementation risks would be low.

Bioengineering is not a feasible remedy for Source Control Area 2 – Launchways because that area is a working area that would not support the development of vegetation.

9.0 Comparative Analysis Of SCM Alternatives

The potentially applicable alternatives for each source control area were evaluated based on the criteria listed in Section 7. In addition, the evaluation considers the protectiveness of each measure for occupational receptors. Separate evaluations were performed for each of the source control areas, because the facility operations and the scale and mechanisms of erosion at each area are different.

9.1 Source Control Area 2 - Launchways

The evaluation of source control alternatives for the Launchways was limited to containment/engineering controls. Removal is a component of each of the containment/engineering controls; however, removal was not evaluated as a standalone source control approach because: (1) the depth of impacted soil is at least 25 feet (e.g., Vector 2.10) and the cost for removal of soil to this depth would be disproportionate to the benefits received; and (2) removal efforts would have unacceptable impacts on facility operations.

Effectiveness

Each of the stabilization technologies described in Section 8.2 could be used to mitigate erosion risk at the Launchways. Aggregate and PCC containment were deemed to be more effective than other stabilization methods. Aggregate containment is expected to require more maintenance than PCC containment. Other solutions, such as armoring using rip rap or CCS could be effective under some circumstances; however, these approaches are not compatible with ongoing operations.

Implementability

In terms of ease of construction, aggregate containment is the simplest to implement and the materials are readily attainable within the vicinity of the Facility. PCC containment is also implementable. PCC materials are readily available in the vicinity of the Facility. Construction of PCC containment is more time consuming and challenging than aggregate containment, and therefore, presents more short term implementation risk. Riprap, CCS, and bioengineering are not compatible with future use of the Launchways for barge staging. For these reasons, aggregate containment and PCC containment were deemed more implementable than the other technologies.

Cost

Based on professional experience in the Portland Harbor area, aggregate emplacement (including subgrade preparation) would cost on the order of \$1 to \$2 per square foot, or \$260,000 for the Launchways. Maintenance of aggregate may be required to address fines that may settle into the aggregate, and ultimately it could be necessary to replace the aggregate

PCC emplacement (including subgrade preparation) would cost on the order of \$1 million, based on a previous contractor estimate. Removal of soil to prepare the subgrade would cost approximately \$3 per square foot (based on an 8-inch depth of removal).

Summary

The comparative analysis of SCMs for Source Control Area 2 – Launchways is summarized below.

Alternative	Effectiveness	Implementability	Cost
Aggregate Containment	Effective; requires ongoing maintenance	Implementable, although scheduling would require consideration of vessel construction schedules.	\$260,000
PCC Containment	Effective; requires ongoing maintenance	Implementable, although scheduling would require consideration of vessel construction schedules.	\$1,000,000
Riprap	--	Not implementable	--
CCS Containment	--	Not implementable	--
Bioengineering	--	Not implementable	--

9.2 Source Control Area 5 – Ways 2 Building

The evaluation of source control alternatives for the riverbank at Source Control Area 5 – Ways 2 Building included a range of containment/engineering controls. These alternatives are evaluated below. Removal was not evaluated because removal would undermine the Ways 2 Building.

Effectiveness

Each of the stabilization technologies described in Section 8.2, with the exception of aggregate containment, PCC containment, and sandbag containment, would reduce the potential for erosion at the slope and would have relatively low risks of contamination during construction. Aggregate containment, PCC containment, and sandbags would be effective if the slope angle were reduced; however, slope adjustments would require undermining of the Ways 2 Building and/or filling areas below the OHWL. Riprap would offer the most effective source control approach because riprap requires little long-term maintenance and does not rely on the establishment of associated vegetation. In contrast, the strength of CCS is affected by vegetation success. Bioengineering has been effective at other portions of the Gunderson riverbank; it is an effective low-impact alternative; however, frequent maintenance is initially required to establish vegetation cover that is sufficient to prevent erosion.

Implementability

The riprap and CCS approaches for bank stabilization are considered equally implementable. The required materials and equipment are readily available within the vicinity of the Facility. However, both stabilization approaches may be limited by permit availability. Bioengineering is considered the most implementable because it can be performed without permitting and short term implementation risk is minimal. Aggregate containment, PCC containment, and sand bag containment are not implementable due to the slope of the riverbank permitting requirements.

Cost

The costs for source control alternatives at Area 5 - Ways 2 Building are in the range of \$25,000. Costs could increase if maintenance and re-planting requirements are significant.

Summary

The comparative analysis of SCMs for Source Control Area 5 – Ways 2 Building is summarized below.

Alternative	Effectiveness	Implementability	Cost
Aggregate Containment	Effective if the riverbank slope is reduced	Not implementable – riverbank grading would be required, which would undermine the Ways 2 Building and/or require filling below the OHWL	Not estimated because alternatives are not expected to be effective or implementable
PCC Containment			
Sandbag Containment			
Riprap	Effective	Permits may be unavailable due to required work below the OHWL	\$44,000
CCS Containment	Effective		\$60,000
Bioengineering	Effective; requires frequent maintenance during initial period of vegetation establishment	Implementable. Does not require permits or modifications to riverbank slope	\$25,000

10.0 Recommended Source Control Measures

Recommended source control measures for the Area 2 riverbank are described below.

10.1 Source Control Area 2- The Launchways

The recommended source control measure for the Launchways consists of aggregate containment. Approximately eight inches of soil would be excavated from unpaved areas of the Launchways. An approximately 8-inch layer of 4 inch minus crushed rock would be installed over a geotextile liner at unpaved Launchways areas. The crushed rock will prevent erosion of Launchways soil via overland flow and during periods of river inundation. The crushed rock is compatible with ongoing uses of the Launchways. In the future, at Gunderson's discretion, PCC may be installed over the crushed rock if necessary for operations.

This approach is equally effective and implementable relative to other approaches, and the overall cost of this approach is less than other alternatives.

In addition to preventing erosion, aggregate containment would prevent worker exposure to COC in underlying soil, and therefore, with ongoing monitoring and maintenance, the aggregate containment system would be protective of worker health.

10.2 Source Control Area 5 – Ways 2 Building

The recommended source control measure for Source Control Area 5 – Ways 2 Building consists of bioengineering. Bioengineering in this area will be performed in accordance with Section 4.5.8 – Soil Bioengineering, of the City of Portland's March 2008 *Erosion Control Manual*. In summary, coir fabric will be carefully anchored to un-vegetated riverbank areas near the Ways 2 Building. The coir fabric will be cut around obstructions such as rock and concrete. Live stakes, consisting of willow and/or other appropriate native plants, will be cut to length and tamped into the ground. Live stakes will be spaced approximately two-feet apart. Planting will occur during the fall, when irrigation will be unnecessary. An irrigation system will be installed to provide water during the dry season. Invasive species will be removed annually. Some replanting will be necessary. It is expected that a continuous network of vegetation will be established within approximately three years. The coir fabric is expected to last five to seven years.

Because bioengineering requires two to three years to become fully effective, it has lower immediate effectiveness when compared with other engineered stabilization approaches (e.g., riprap or CCS); however, other engineered approaches would require construction below the OHWL and may not be implementable due to permitting requirements. In summary, bioengineering is effective and more implementable than other approaches, and without impacts that may cause concern to fisheries resource agencies, and the overall cost of this approach is likely less than other alternatives.

Bioengineering would not address worker risk to COC (i.e., arsenic) in soil at Source Control Area 5- Ways 2 Building. More invasive and less implementable alternatives would be required (e.g., removal or capping). The arsenic concentrations near Source Control Area 5 are approximately 20 mg/kg (samples 2.1 and S2-1; see Figure 4), or approximately ten times the occupational screening level and twice the naturally occurring background concentration (Table 1). Based on the infrequent worker activities in this area, we anticipate that a future human health risk assessment will show that the arsenic concentrations in soil in this area do not pose an unacceptable risk to workers.

11.0 References

- Apex Companies, 2013. *Work Plan for Interim Source Control Measures, 4350 NW Front Avenue, Portland, Oregon*. April 30, 2013.
- Ash Creek Associates, 2012. *Supplemental Area 2 Riverbank Source Control Evaluation, 4350 NW Front Avenue, Portland, Oregon*. December 3, 2012.
- City of Portland, 2008. *Erosion Control Manual*.
- Integral Consulting, Windward Environmental LLC, Kennedy/Jenks Consultants, and AnchorQEA, LLC, 2011. *Portland Harbor RI/FS, Remedial Investigation Report, Draft Final*. August 29, 2011.
- Oregon Department of Environmental Quality, 2013. *Letter regarding Area 2 and Schnitzer ASD Yard, Riverbank Interim Source Control Measures Work Plan*. June 25, 2013.
- Shaw, 2011. *Area 2 – Erodible and Riverbank Soil Source Control Evaluation, Gunderson Facility 4350 NW Front Avenue, Portland, Oregon*. August 2011.
- Squier Associates, 1992. *Preliminary Site Assessment, Gunderson Area 2 Industrial Operations Area, Portland, Oregon*. June 17, 2002.
- Squier-Kleinfelder, 2004a. *Expanded Preliminary Assessment, Gunderson Area 2 Rail Car and Marine Barge Assembly Area, Portland, Oregon*. January 2004.

Table 1
Source Control Goal Concentrations
Focused Feasibility Study for Area 2 Riverbank Source Control Measures
Gunderson, LLC. - Portland, Oregon

Chemical of Concern	Units	Source Control Goal Concentration	
		Protection of River ¹	Occupational Receptors ²
Arsenic	mg/kg	3	1.7/8.8
Chromium (III)	mg/kg	--	1800000
Copper	mg/kg	149	41,000
Lead	mg/kg	128	800
Manganese	mg/kg	--	23000
Mercury	mg/kg	1.1	310
Silver	mg/kg	--	5100
Zinc	mg/kg	459	350000
PCBs (Total)	mg/kg	0.009	0.56
Tributyltin	mg/kg	0.024	0.25*
Dieldrin	mg/kg	0.00007	0.13

Notes:

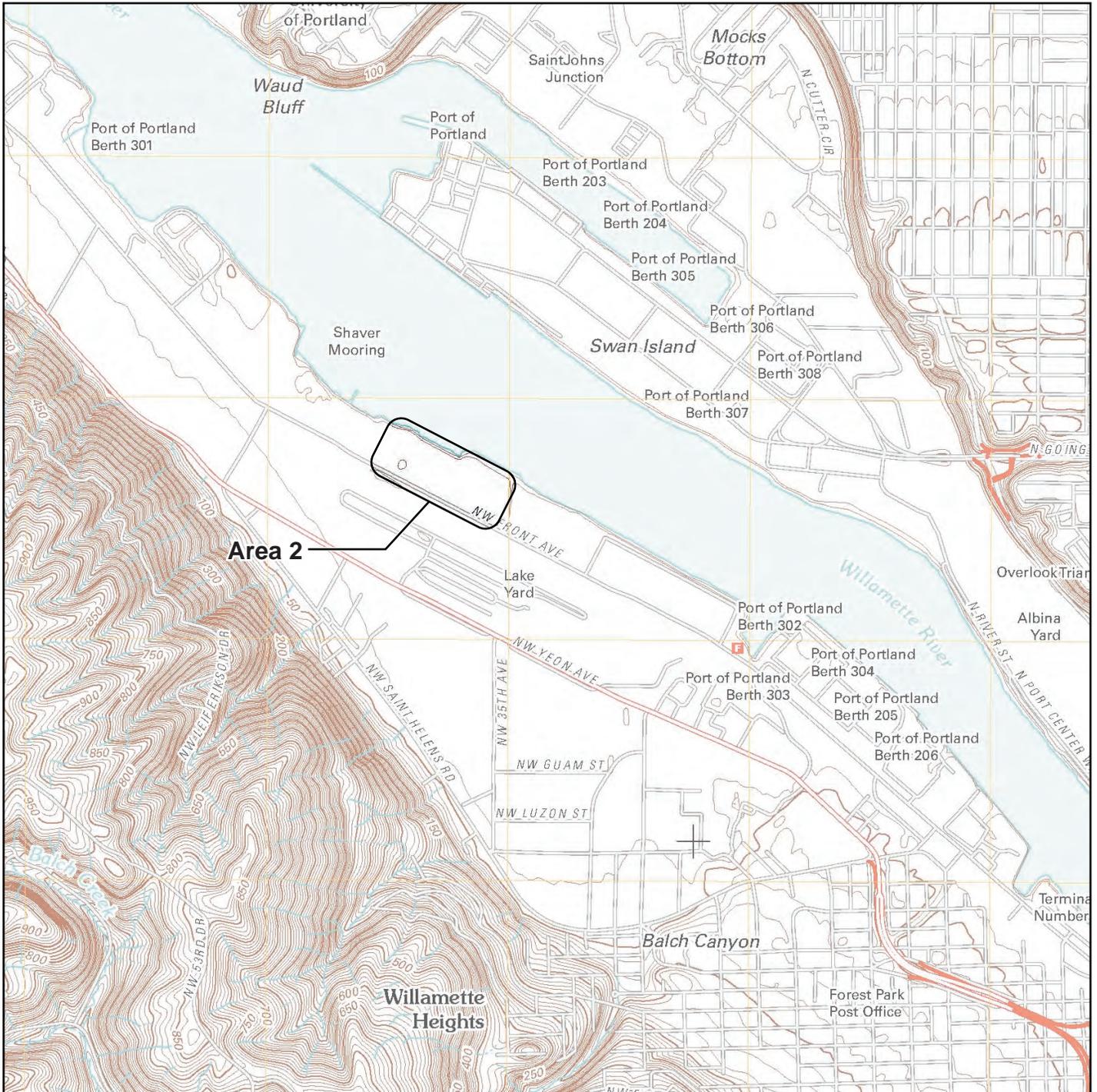
1. Draft U.S. EPA Preliminary Remediation Goal for Riverbank Soil
 2. DEQ Risk-Based Concentration for Occupational Receptors
 3. The occupational screening level for arsenic is 1.7 mg/kg. The DEQ default background concentration for arsenic in the Portland Basin physiographic province is 8.8 mg/kg.
- = Not established.
- * = U.S. EPA Regional Screening Level for industrial soil.

Table 2
Hot Spot Concentrations
Focused Feasibility Study for Area 2 Riverbank Source Control Measures
Gunderson, LLC. - Portland, Oregon

Chemical of Concern	Units	Risk-Based Screening Level		Hot Spot Multiplier	Hot Spot Concentration
		Value	Basis		
Arsenic	mg/kg	1.7	DEQ RBC, Carcinogen	100	170
Chromium (III)	mg/kg	1800000	EPA RSL, Non-Carcinogen	10	18,000,000
Copper	mg/kg	41,000	DEQ RBC, Non-Carcinogen	10	410,000
Lead	mg/kg	800	DEQ RBC, Non-Carcinogen	10	8,000
Manganese	mg/kg	23,000	DEQ RBC, Non-Carcinogen	10	230,000
Mercury	mg/kg	310	DEQ RBC, Non-Carcinogen	10	3,100
Silver	mg/kg	5,100	DEQ RBC, Non-Carcinogen	10	51,000
Zinc	mg/kg	350000	EPA RSL, Non-Carcinogen	10	3,500,000
PCBs (Total)	mg/kg	0.56	DEQ RBC, Carcinogen	100	56
Tributyltin	mg/kg	250	EPA RSL, Non-Carcinogen	10	2,500
Dieldrin	mg/kg	0.13	DEQ RBC, Carcinogen	100	13

Notes:

1. DEQ RBC: Risk-based Screening Levels for occupational exposure scenarios.
2. EPA RSL: U.S. Environmental Protection Agency Regional Screening Level (used when an RBC has not been established).



Note: Base map prepared from USGS 7.5-minute quadrangle of Portland, OR, dated 2011 as provided by USGS.gov.



Site Location Map

Area 2 Riverbank Source Control Measures
 Focused Feasibility Study
 Gunderson LLC
 Portland, Oregon

 Apex Companies, LLC
 3015 SW First Avenue
 Portland, Oregon 97201

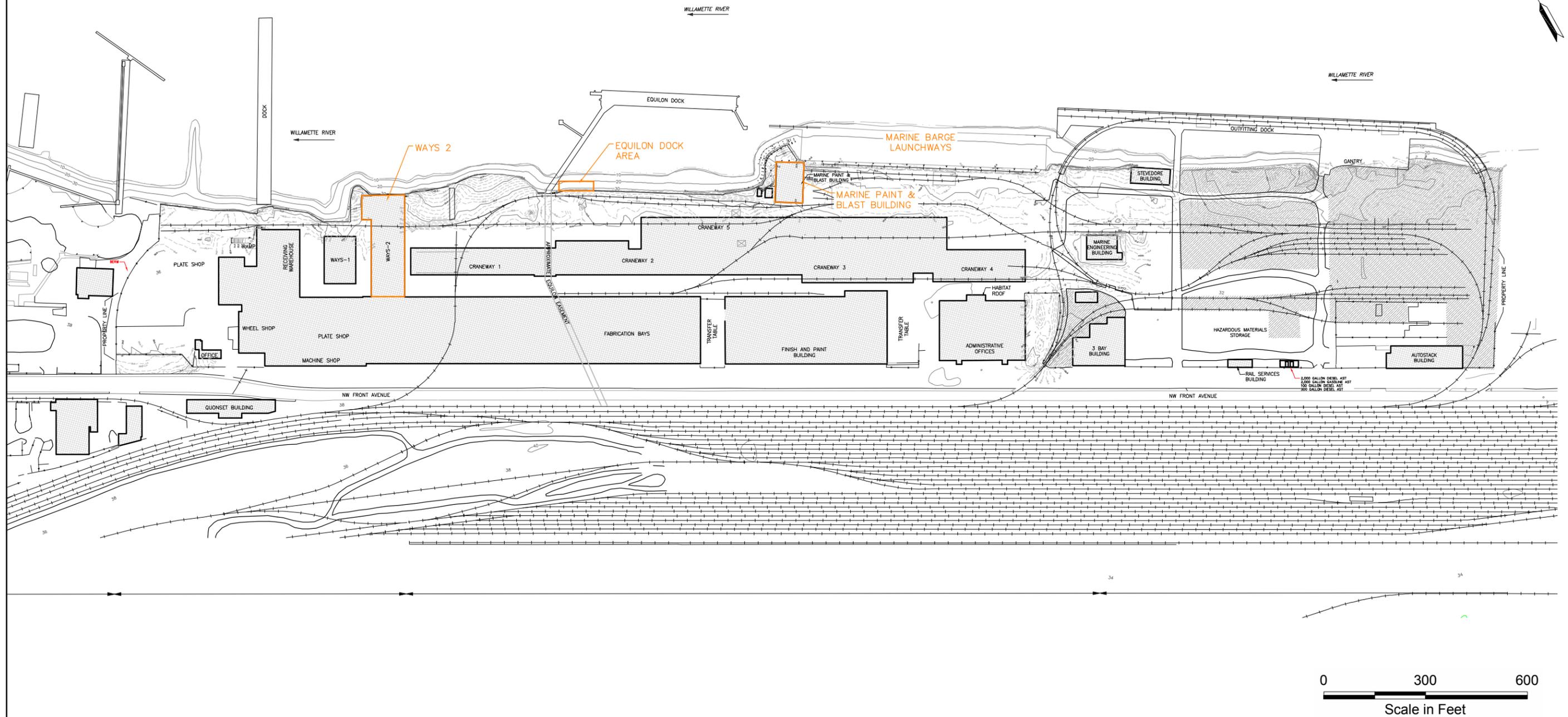
Project Number	1935-02
August 2013	

Figure
1

AREA 1

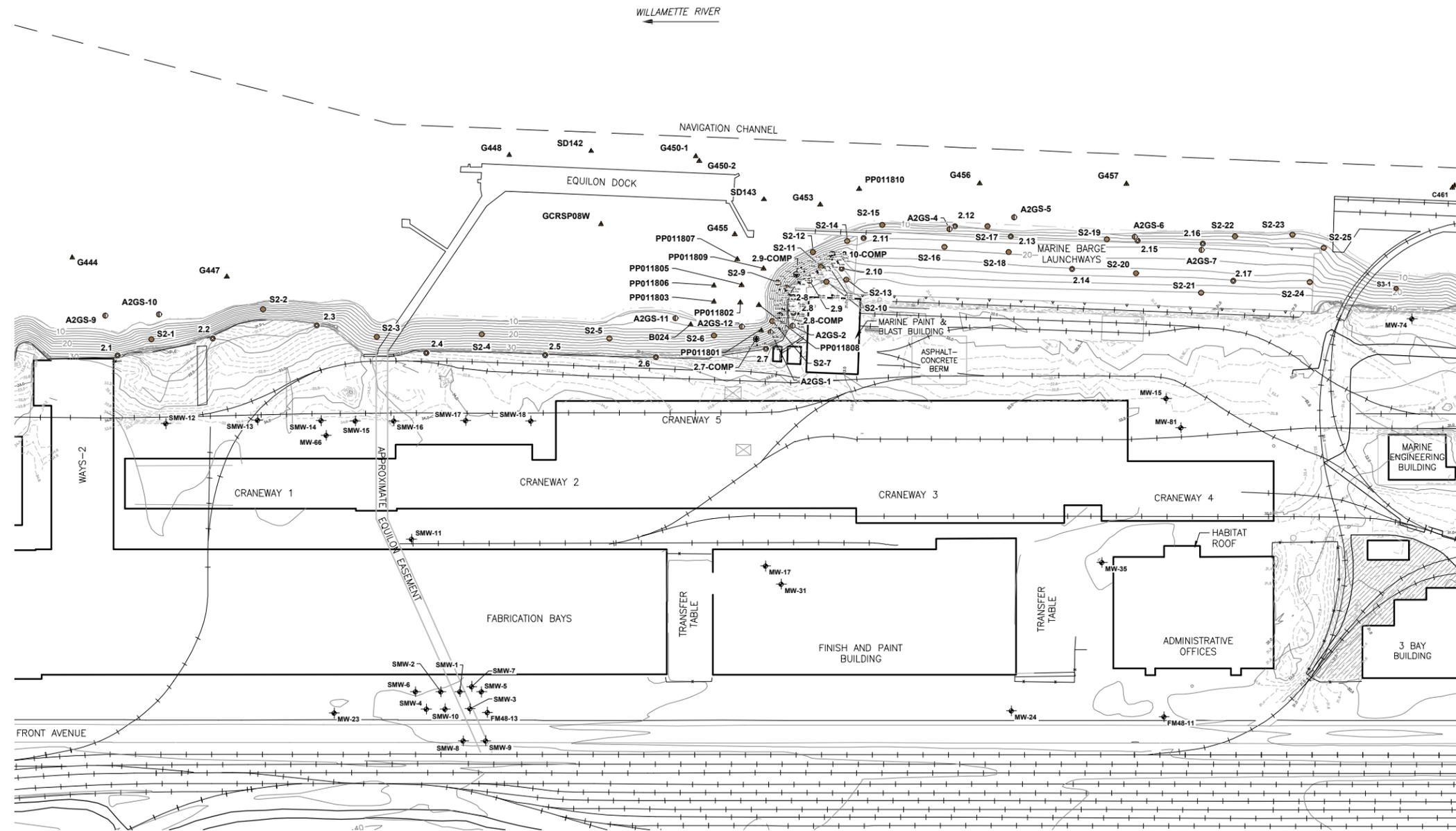
AREA 2

SCHNITZER ASD YARD
(AREA 3)



NOTE:
 1) Base map prepared from a Johnson Land Survey and
 OSP-BASE-STW provided by Gunderson LLC.

Site Vicinity Plan Area 2 Riverbank Source Control Measures Focused Feasibility Study Gunderson LLC Portland, Oregon			
 Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1935-02	Figure
	August 2015		2



Legend:

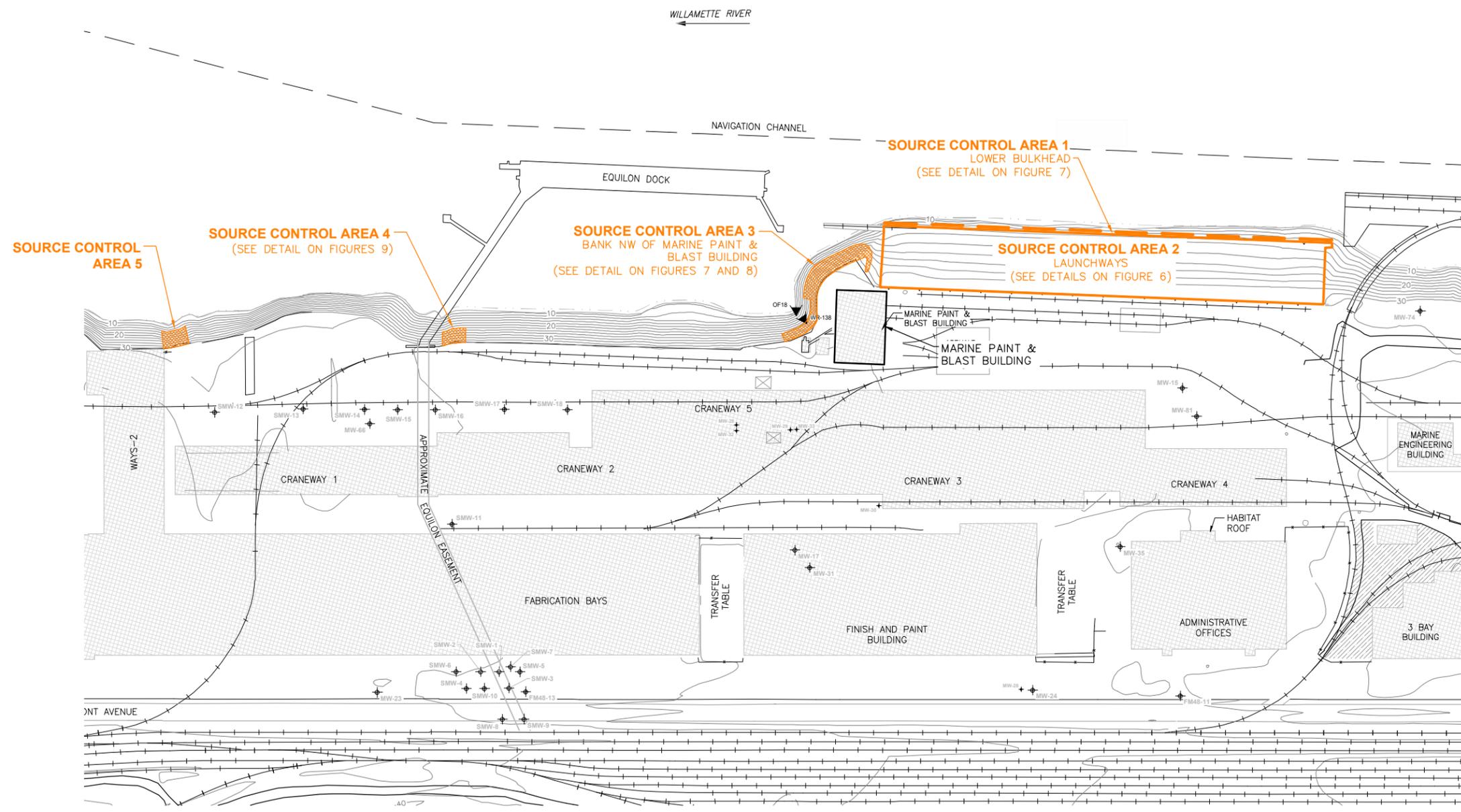
- 3.10 Vector Borehole Location
- S3-14 Riverbank Surface Sample Location
- 3.9-COMP Composite Riverbank Sample Location
- HA-41 Surface Sediment Station Location
- A2GS-5 Grab Sample (2003)
- MW-66 Monitoring Well Location



NOTES:

- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
- 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.

<h3 style="margin: 0;">Sample Location Map</h3> <p style="margin: 0;">Area 2 Riverbank Source Control Measures Focused Feasibility Study Gunderson LLC Portland, Oregon</p>		
<p style="font-size: 8px; margin: 0;">Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201</p>	<p style="font-size: 8px; margin: 0;">Project Number 1935-02</p> <p style="font-size: 8px; margin: 0;">August 2015</p>	<p style="font-size: 8px; margin: 0;">Figure 4</p>



Legend:

- MW-74 Monitoring Well Location
WR-138 Outfall Location
- Riverbank Source Control Measure Location
 Riverbank
- Railroad
 Fence Line

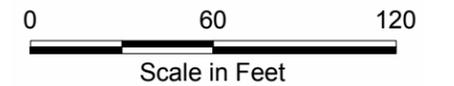
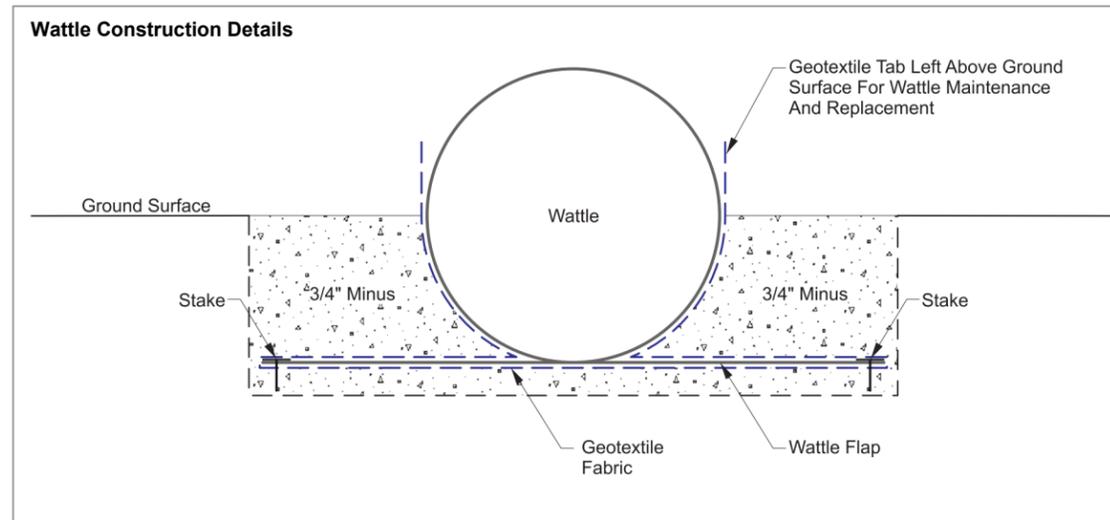
- NOTES:**
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Ordinary High Water Line = 16.6 feet NGVD/20.2 feet NAVD.

Riverbank Source Control Measure Locations - Area 2		
Area 2 Riverbank Source Control Measures		
Focused Feasibility Study		
Gunderson LLC		
Portland, Oregon		
Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1935-02	Figure 5
August 2015		



Legend:

- Top of Riverbank (Approximate)
- Crushed Rock
- Soil
- Existing Concrete
- Bulkhead Armoring
- Railroad
- Wattle



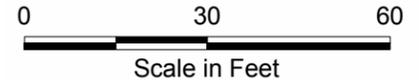
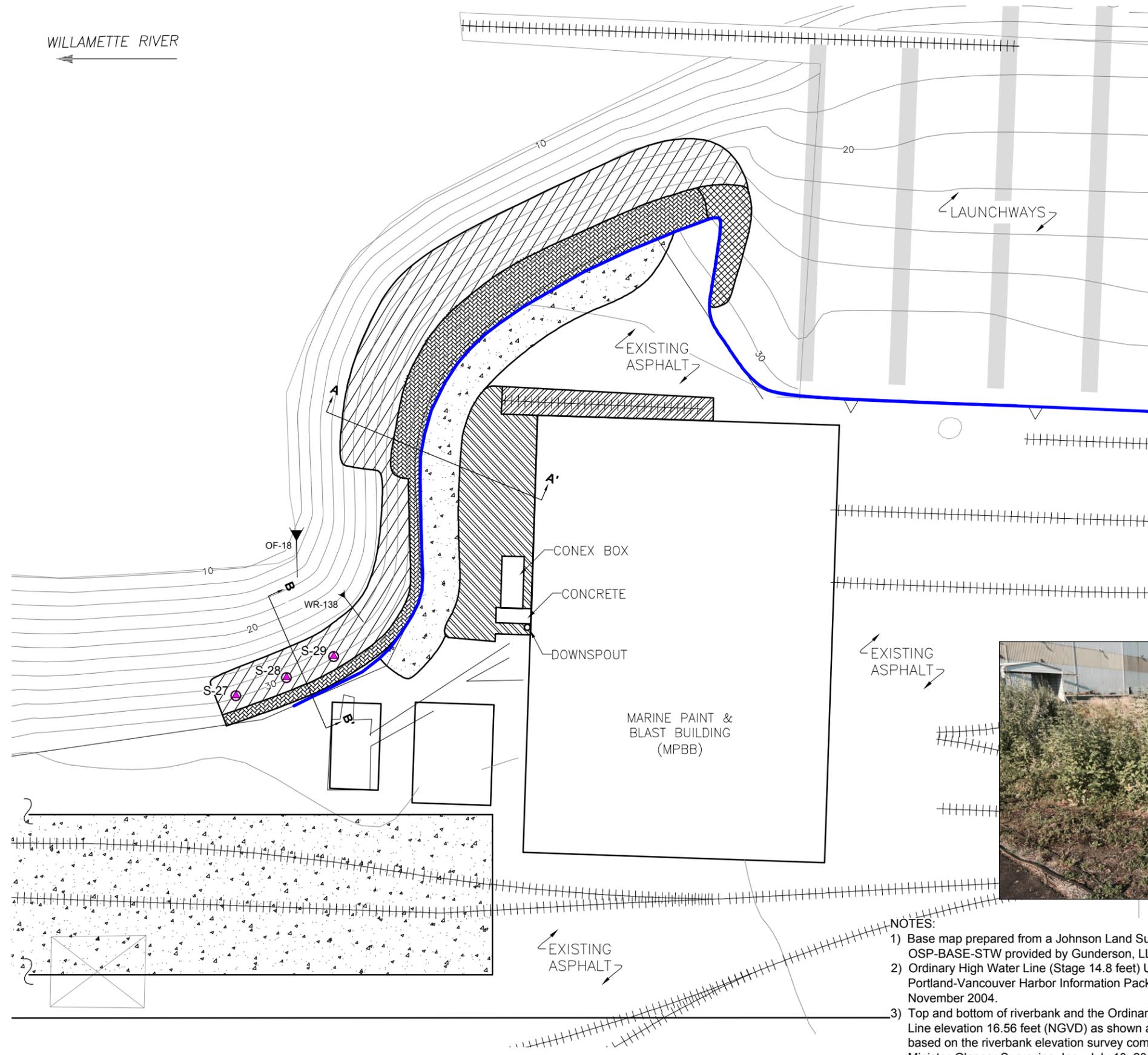
- NOTES:**
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Ordinary High Water Line = 16.6 feet NGVD/20.2 feet NAVD.
 - 3) Aggregate installation is proposed at soil/crushed rock areas.

Launchways - Interim Source Control Details		
Area 2 Riverbank Source Control Measures Focused Feasibility Study Gunderson LLC Portland, Oregon		
Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1935-02	Figure 6
August 2015		

WILLAMETTE RIVER



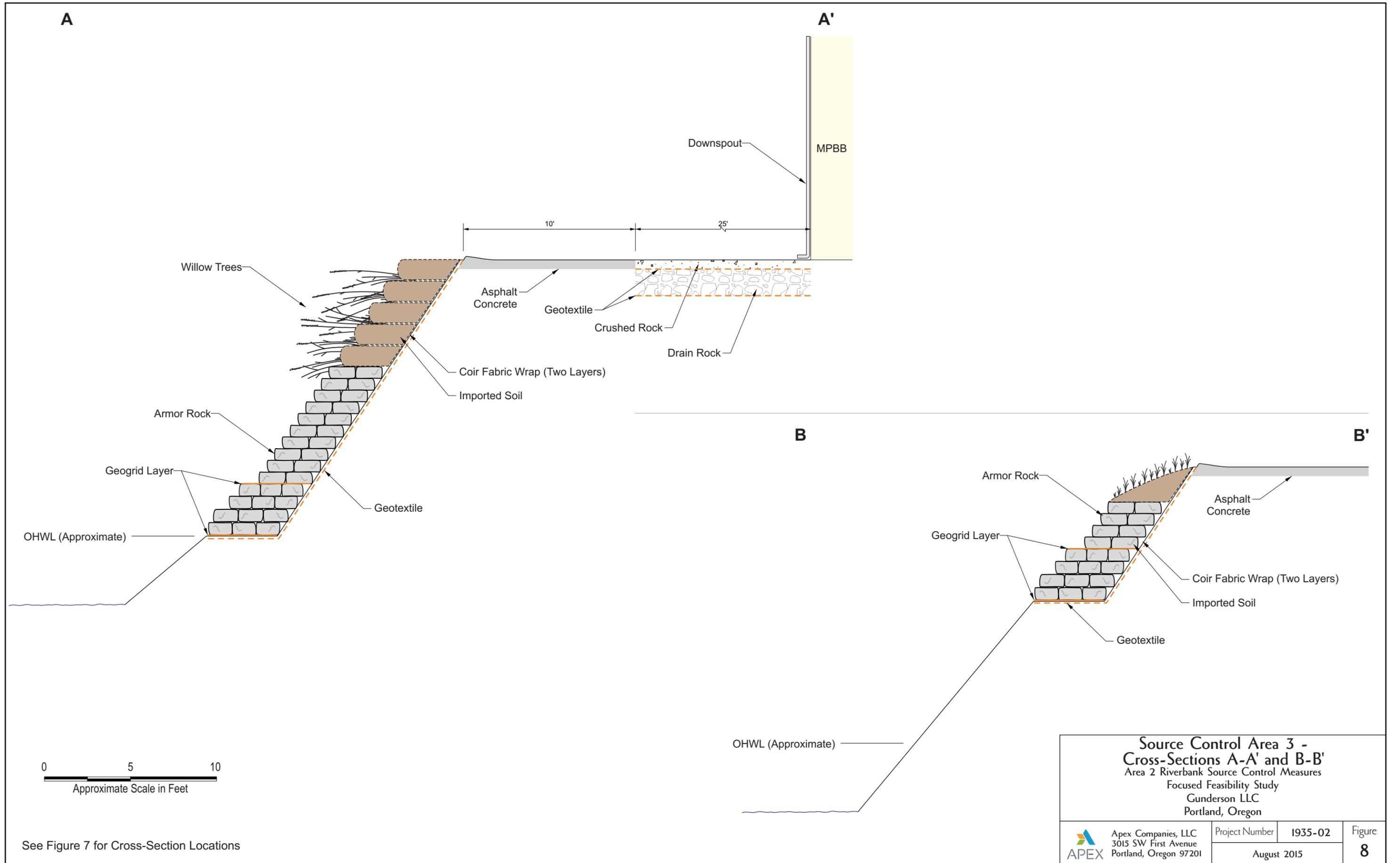
- Legend:**
- Rock Arming
 - Bioengineering
 - Asphalt-Concrete Overlay
 - Boulder Wall
 - Crushed Rock Area - Former Soil (≥ 2 Feet Thick)
 - Drain Rock Area (8 Inches Thick)
 - Top of Riverbank (Approximate)
 - WR-138 Outfall Location
 - Railroad
 - Fence Line
 - A A' Cross-Section Location (See Figure 8 for Details)
 - S-28 Composite Soil Sample Location



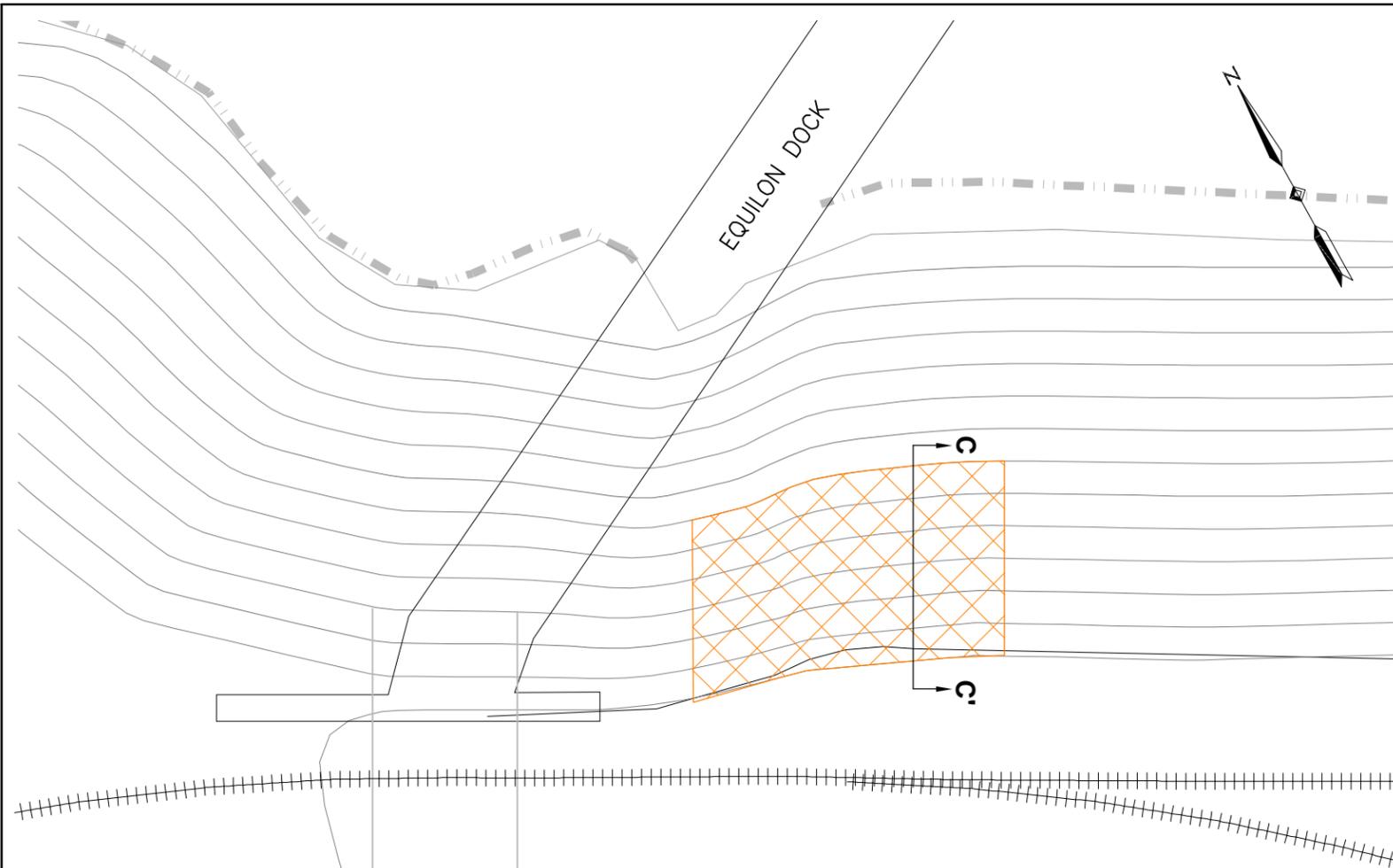
- NOTES:**
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson, LLC.
 - 2) Ordinary High Water Line (Stage 14.8 feet) USACE Portland-Vancouver Harbor Information Packet, Table A-1, November 2004.
 - 3) Top and bottom of riverbank and the Ordinary High Water Line elevation 16.56 feet (NGVD) as shown are approximate based on the riverbank elevation survey completed by Minister-Glaeser Surveying, Inc., July 10, 2012.
 - 4) Contour elevation datum NAD83.

**Source Control Area 3 -
Interim Source Control Measures Details
Area 2 Riverbank Source Control Measures
Focused Feasibility Study
Gunderson LLC
Portland, Oregon**

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1935-02	Figure
	August 2015		7



See Figure 7 for Cross-Section Locations



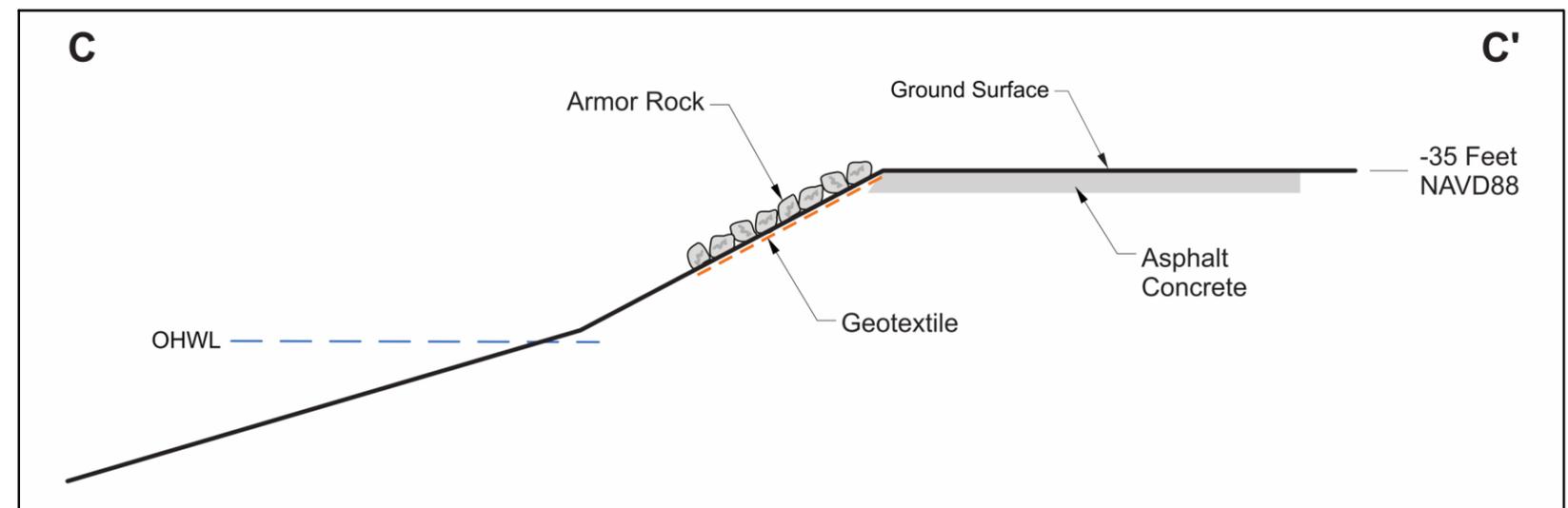
Legend:

 Riverbank Source Control Measure Location

 Cross-Section Location

 Riverbank

 Railroad



NOTES:

- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
- 2) Ordinary High Water Line = 16.6 feet NGVD/20.2 feet NAVD.

Equilon Dock Area Cross-Section -Area 2

Area 2 Riverbank Source Control Measures
Focused Feasibility Study
Gunderson LLC
Portland, Oregon

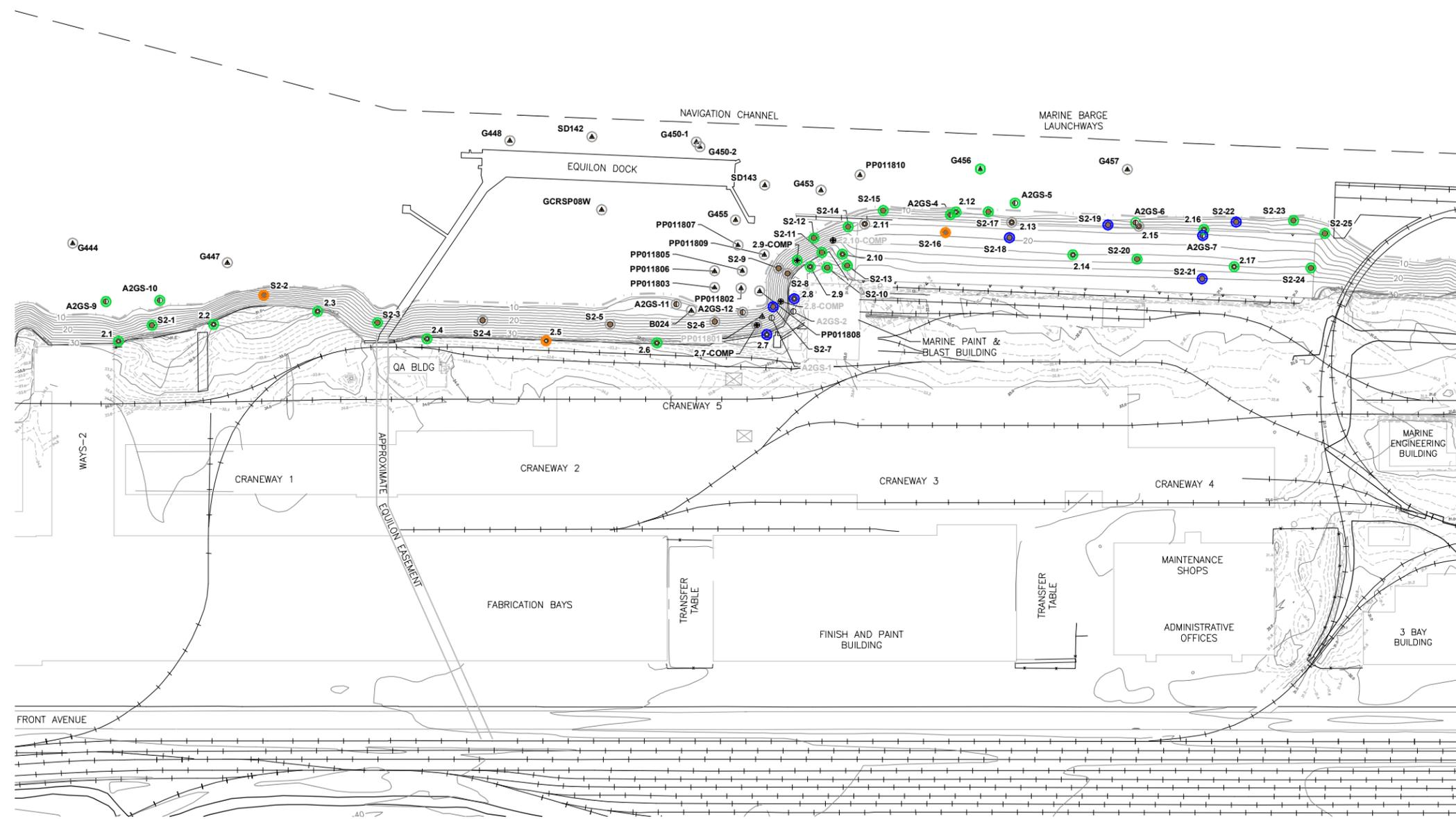
 Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number 1935-02
August 2015

Figure 9

Appendix A

Source Control Evaluation Figures



Legend:

- 3.10 Vector Borehole Location
- S3-14 Riverbank Surface Sample Location
- 3.9-COMP Composite Riverbank Sample Location
- HA-41 Surface Sediment Station Location
- A2GS-5 Grab Sample (2003)

Magnitude of Exceedance above JSCS Screening Level in Soil:

- No Exceedance
- 1 - 10
- 10.1 - 20
- 20.1 - 82

Magnitude of Exceedance above PRG Screening Level in Sediment:

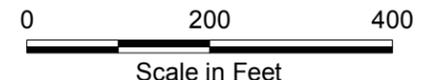
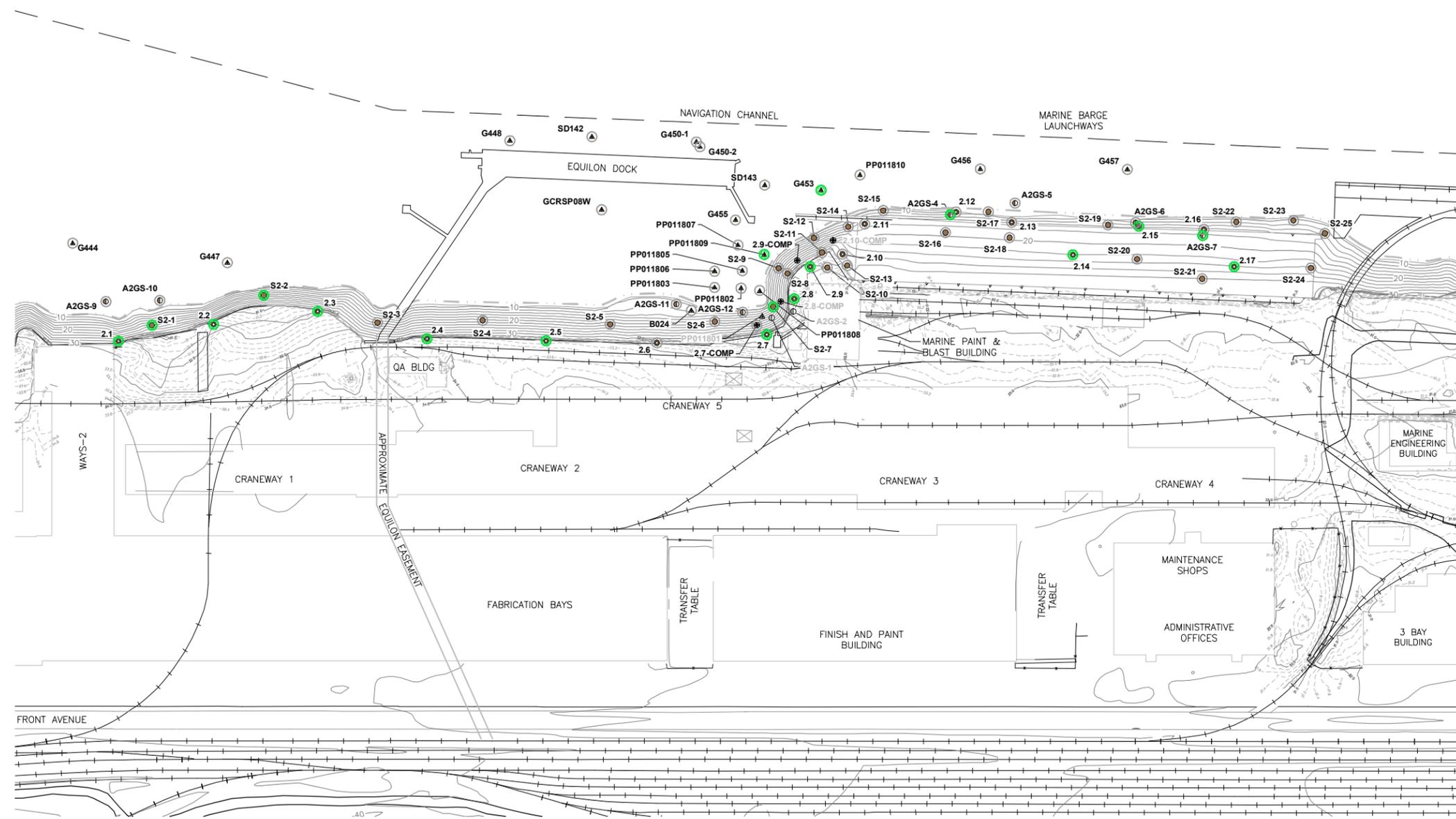
- No Exceedance
- 1 - 5

- NOTES:
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.



Magnitude of Exceedance above JSCS and PRG Screening Levels - Arsenic
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>		Project Number 1935-02	Figure 4
November 2012			

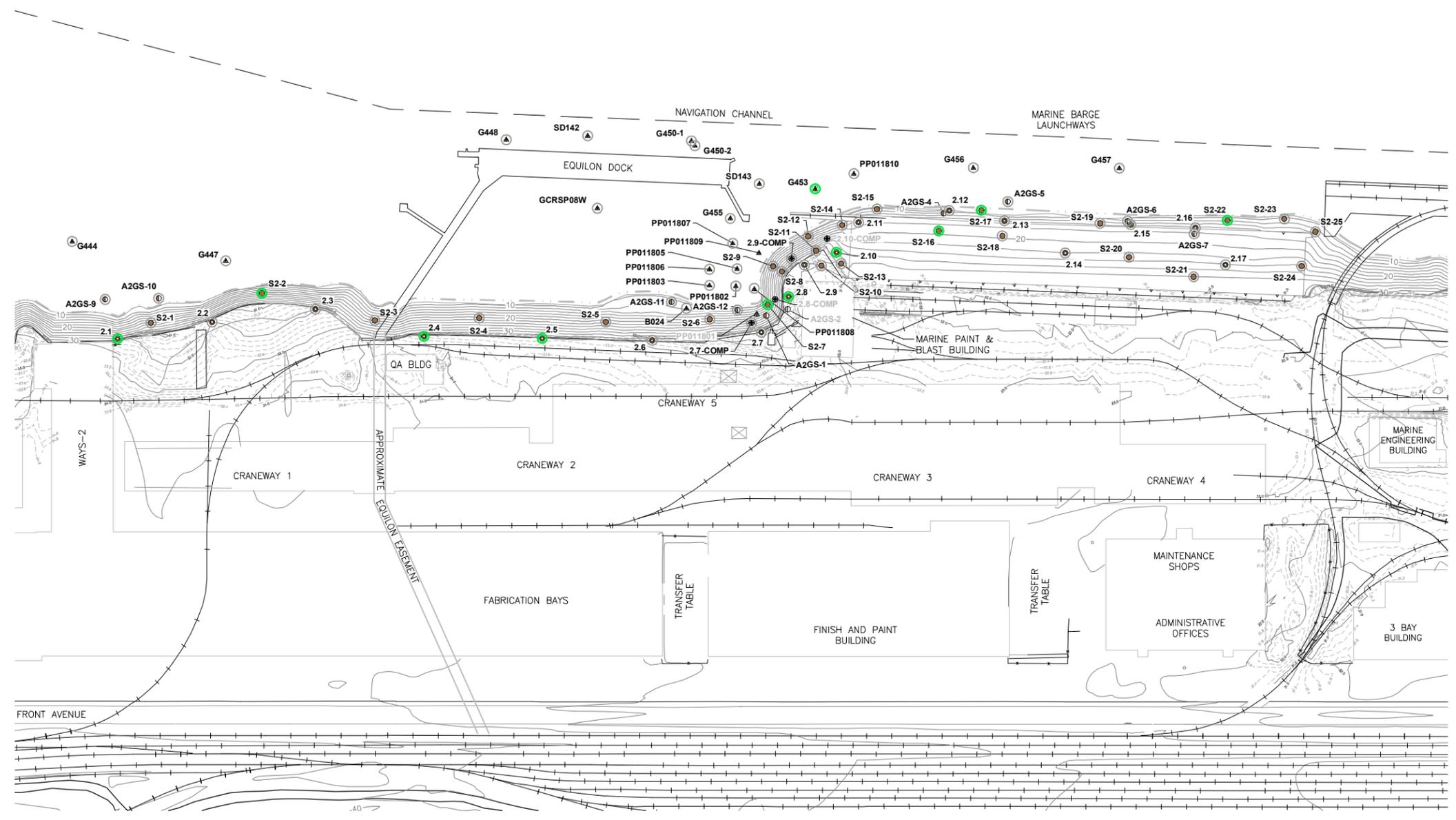


- Legend:**
- 3.10 Vector Borehole Location
 - S3-14 Riverbank Surface Sample Location
 - 3.9-COMP Composite Riverbank Sample Location
 - HA-41 Surface Sediment Station Location
 - A2GS-5 Grab Sample (2003)
- | | |
|--|---|
| Magnitude of Exceedance above JSCS Screening Level in Soil: | Magnitude of Exceedance above PRG Screening Level in Sediment: |
| No Exceedance | No Exceedance |
| 1 - 10 | 1 - 5 |

- NOTES:**
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Mercury
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	APEX	Project Number 1935-02	Figure 5
November 2012			



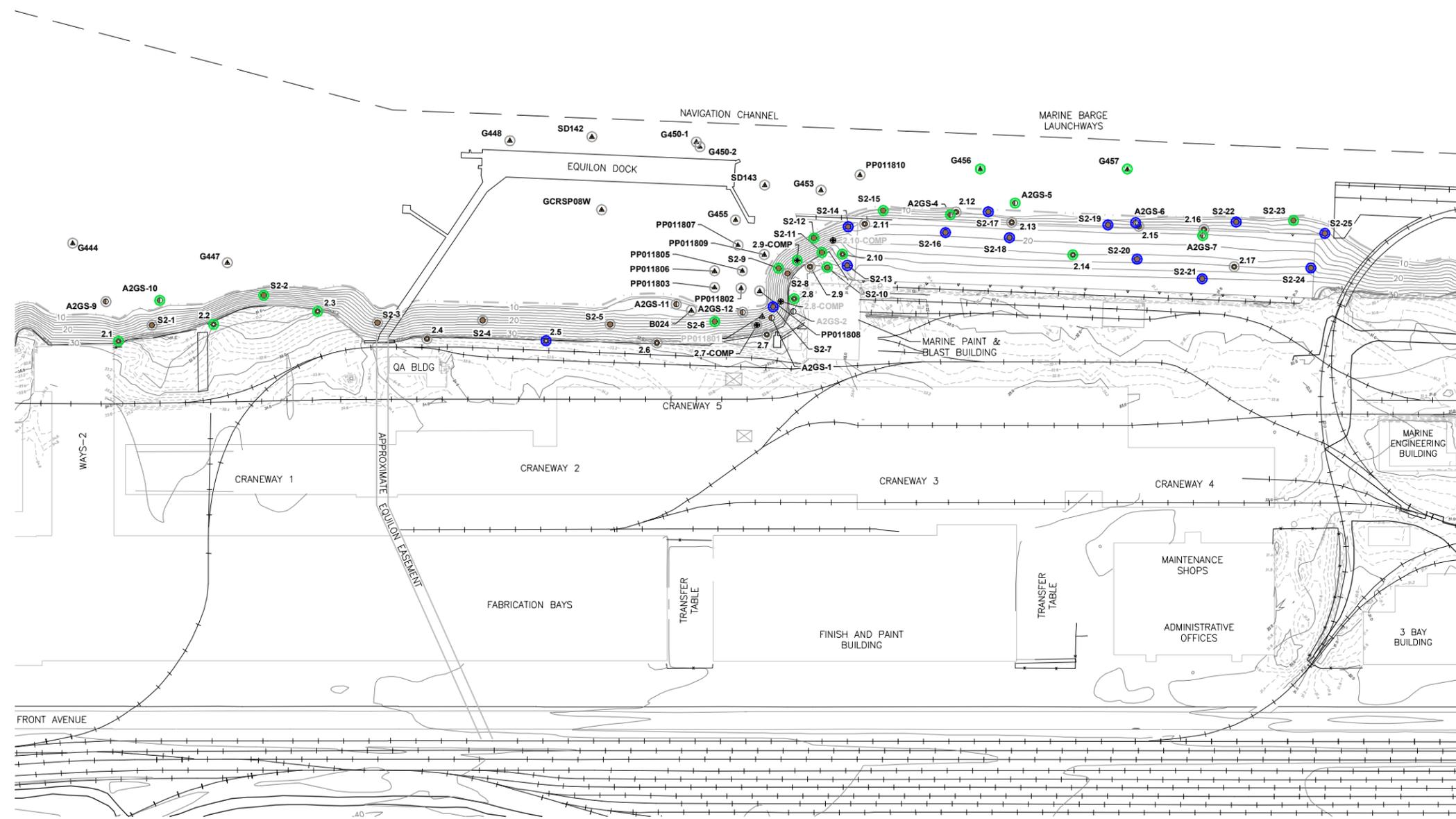
- Legend:**
- 3.10 Vector Borehole Location
 - S3-14 Riverbank Surface Sample Location
 - 3.9-COMP Composite Riverbank Sample Location
 - HA-41 Surface Sediment Station Location
 - A2GS-5 Grab Sample (2003)
- | | |
|--|---|
| Magnitude of Exceedance above JSCS Screening Level in Soil: | Magnitude of Exceedance above PRG Screening Level in Sediment: |
| No Exceedance | No Exceedance |
| 1 - 3 | 1 - 5 |

- NOTES:**
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Chromium

Supplemental Area 2 Riverbank SCE
Gunderson LLC
Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	APEX	Project Number 1935-02	Figure 6
November 2012			



Legend:

- 3.10 Vector Borehole Location
- S3-14 Riverbank Surface Sample Location
- 3.9-COMP Composite Riverbank Sample Location
- HA-41 Surface Sediment Station Location
- A2GS-5 Grab Sample (2003)

Magnitude of Exceedance above JSCS Screening Level in Soil:

- No Exceedance
- 1 - 10
- 10.1 - 35

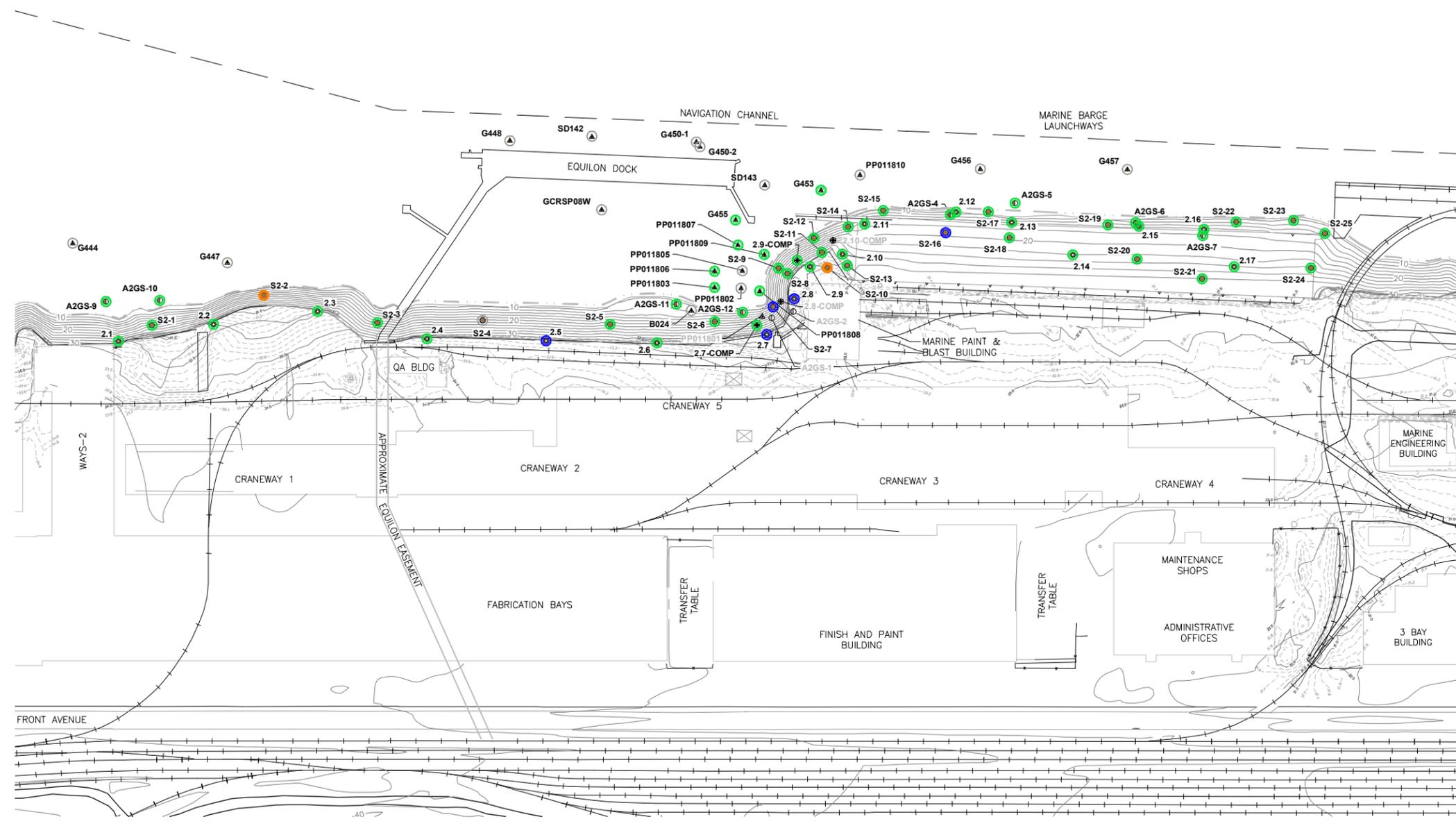
Magnitude of Exceedance above PRG Screening Level in Sediment:

- No Exceedance
- 1 - 5

- NOTES:
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Copper
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	APEX	Project Number 1935-02	Figure 7
November 2012			



Legend:		Magnitude of Exceedance above JSCS Screening Level in Soil:		Magnitude of Exceedance above PRG Screening Level in Sediment:	
3.10	Vector Borehole Location	○	No Exceedance	○	No Exceedance
S3-14	Riverbank Surface Sample Location	○	1 - 20	○	1 - 5
3.9-COMP	Composite Riverbank Sample Location	○	20.1 - 50	○	5.1 - 11
HA-41	Surface Sediment Station Location	○	50.1 - 88		
A2GS-5	Grab Sample (2003)				

- NOTES:
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.

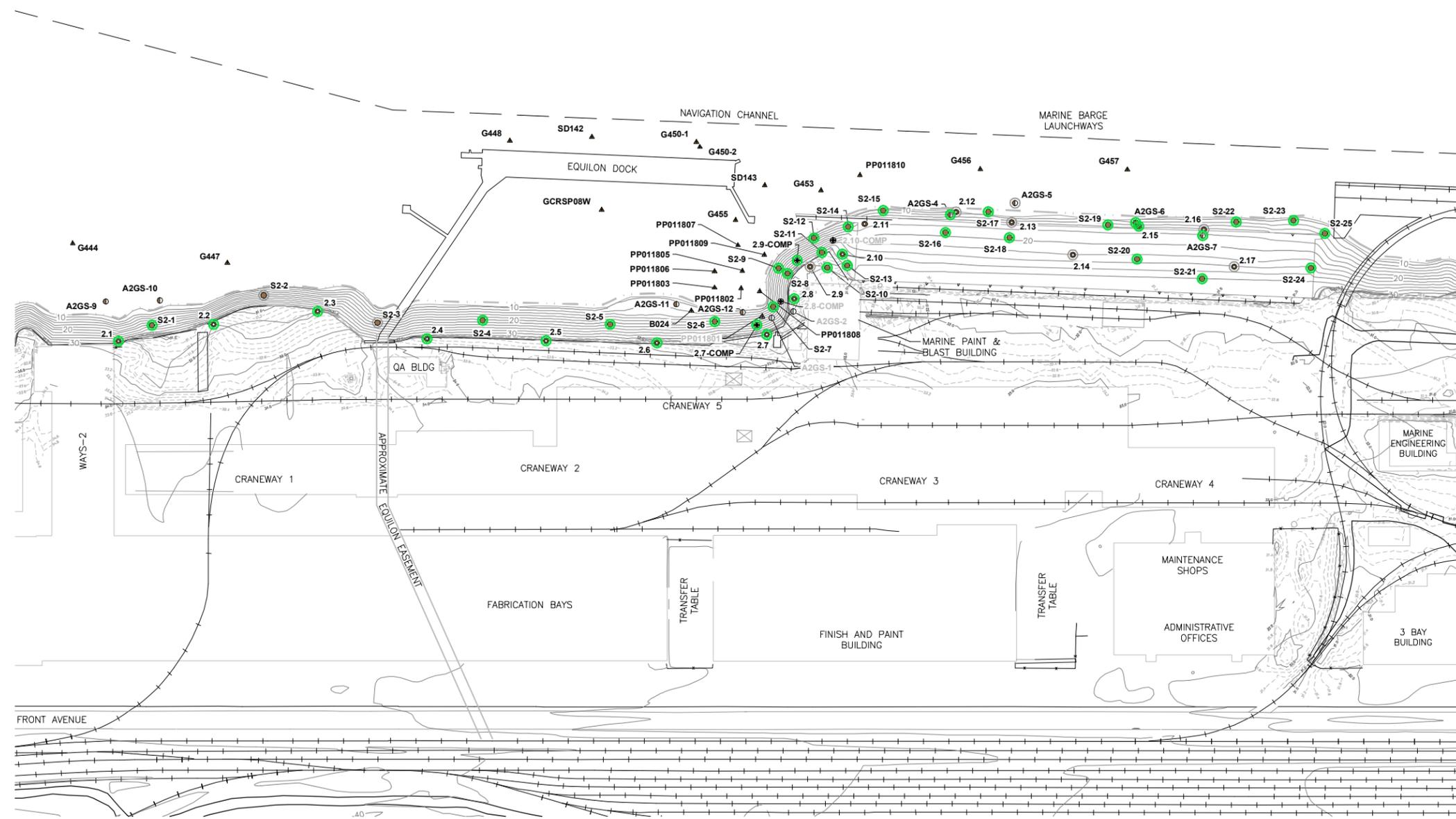
Magnitude of Exceedance above JSCS and PRG Screening Levels - Lead

Supplemental Area 2 Riverbank SCE

Gunderson LLC

Portland, Oregon

Ash Creek Associates A Division of Apex Companies, LLC		Project Number 1935-02	Figure 8
November 2012			

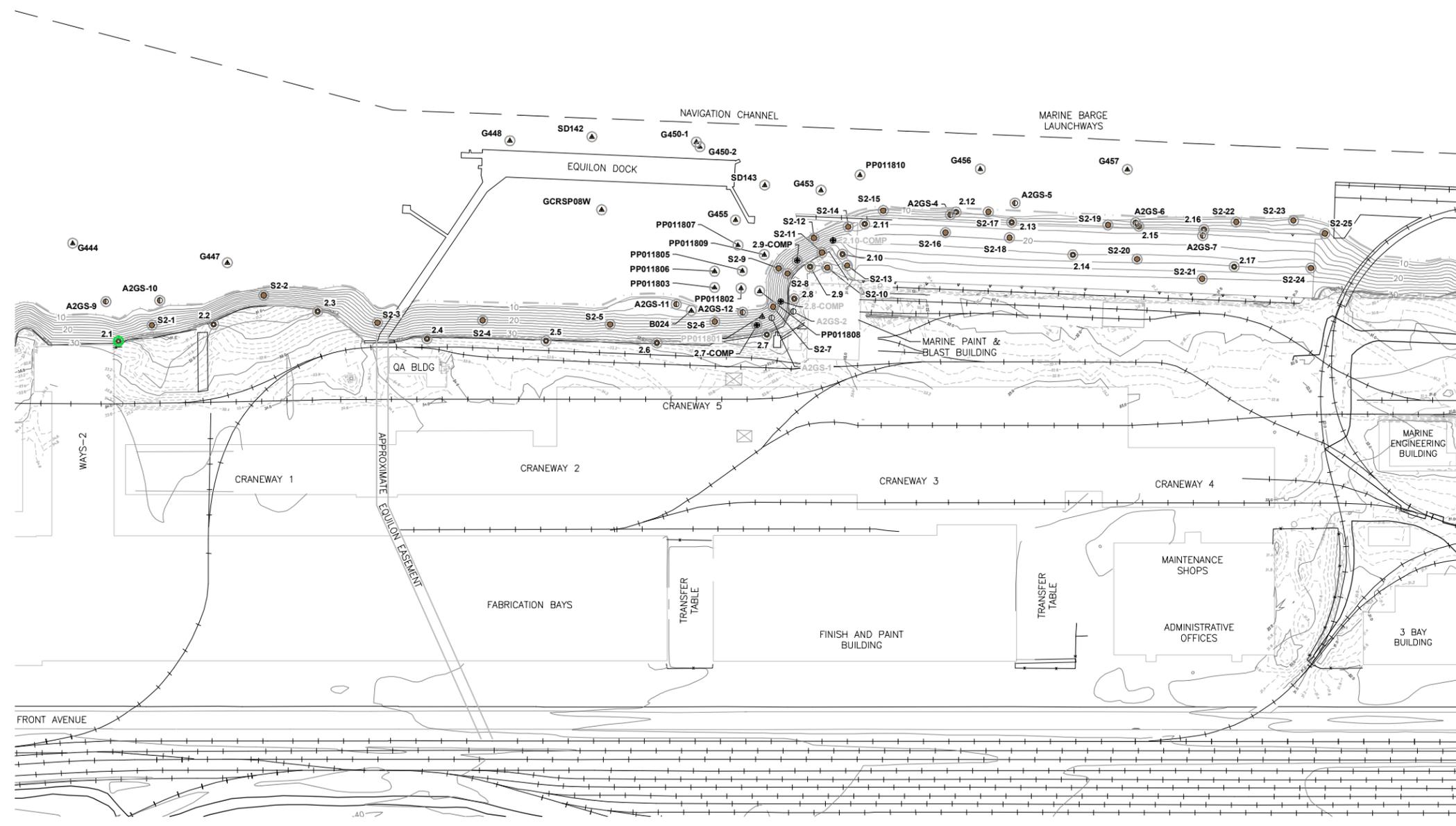


- Legend:**
- 3.10 Vector Borehole Location
 - S3-14 Riverbank Surface Sample Location
 - 3.9-COMP Composite Riverbank Sample Location
 - HA-41 Surface Sediment Station Location
 - A2GS-5 Grab Sample (2003)
- Magnitude of Exceedance above JSCS Screening Level in Soil:**
- No Exceedance
 - 1 - 8.2
- Magnitude of Exceedance above PRG Screening Level in Sediment:**
- (No PRG for Manganese)

- NOTES:**
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Manganese
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	APEX	Project Number 1935-02	Figure 9
November 2012			



Legend:

- 3.10 Vector Borehole Location
- S3-14 Riverbank Surface Sample Location
- 3.9-COMP Composite Riverbank Sample Location
- HA-41 Surface Sediment Station Location
- A2GS-5 Grab Sample (2003)

Magnitude of Exceedance above JSCS Screening Level in Soil:

- No Exceedance
- 1 - 2

Magnitude of Exceedance above PRG Screening Level in Sediment:

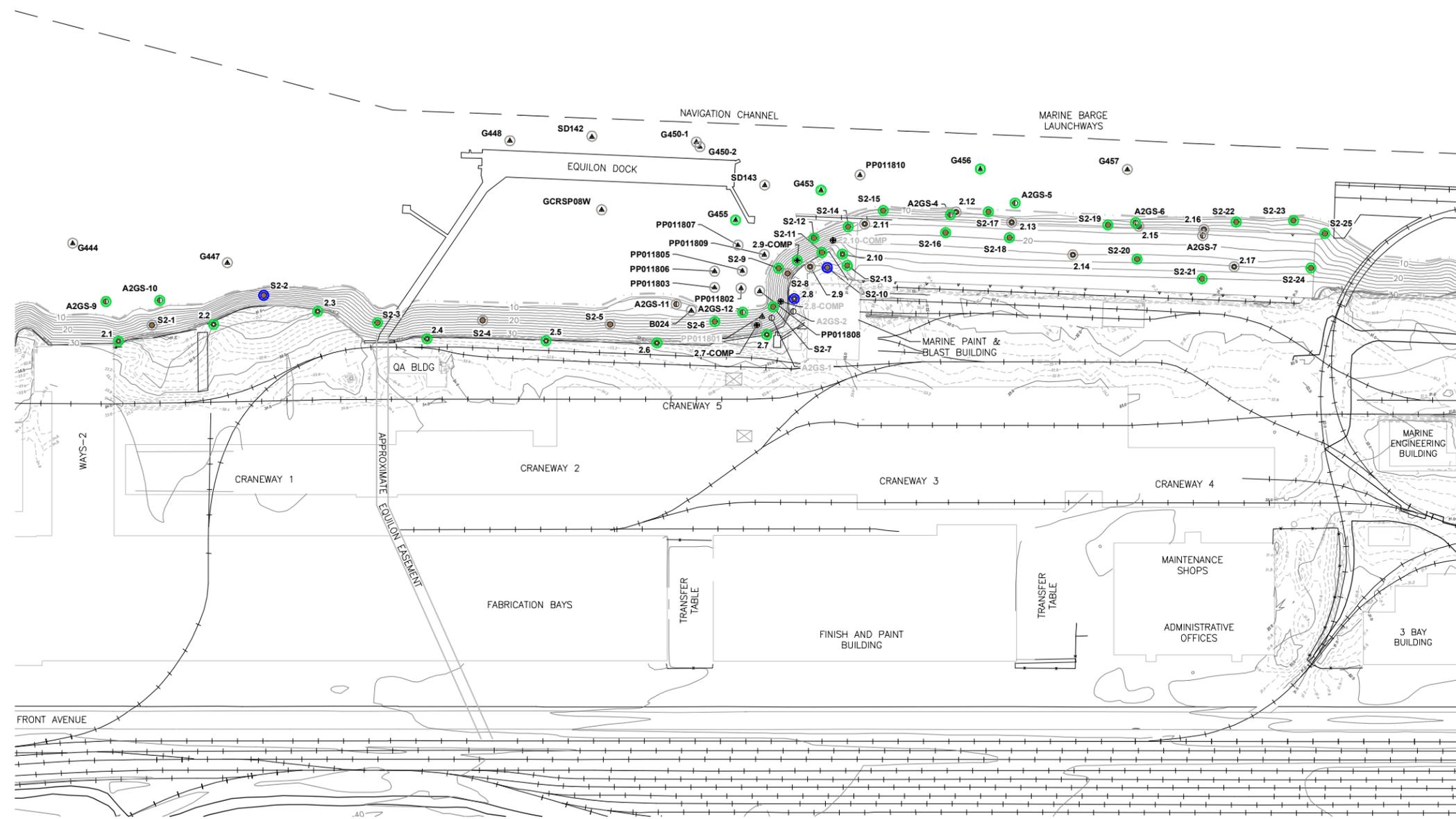
- No Exceedance

NOTES:

- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
- 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
- 3) JSCS = Joint Source Control Strategy
- 4) PRG = Preliminary Remediation Goal
- 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
- 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Silver
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	APEX	Project Number 1935-02	Figure 11
November 2012			



Legend:

- 3.10 Vector Borehole Location
- S3-14 Riverbank Surface Sample Location
- 3.9-COMP Composite Riverbank Sample Location
- HA-41 Surface Sediment Station Location
- A2GS-5 Grab Sample (2003)

Magnitude of Exceedance above JSCS Screening Level in Soil:

- No Exceedance
- 1 - 10
- 10.1 - 17

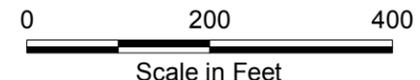
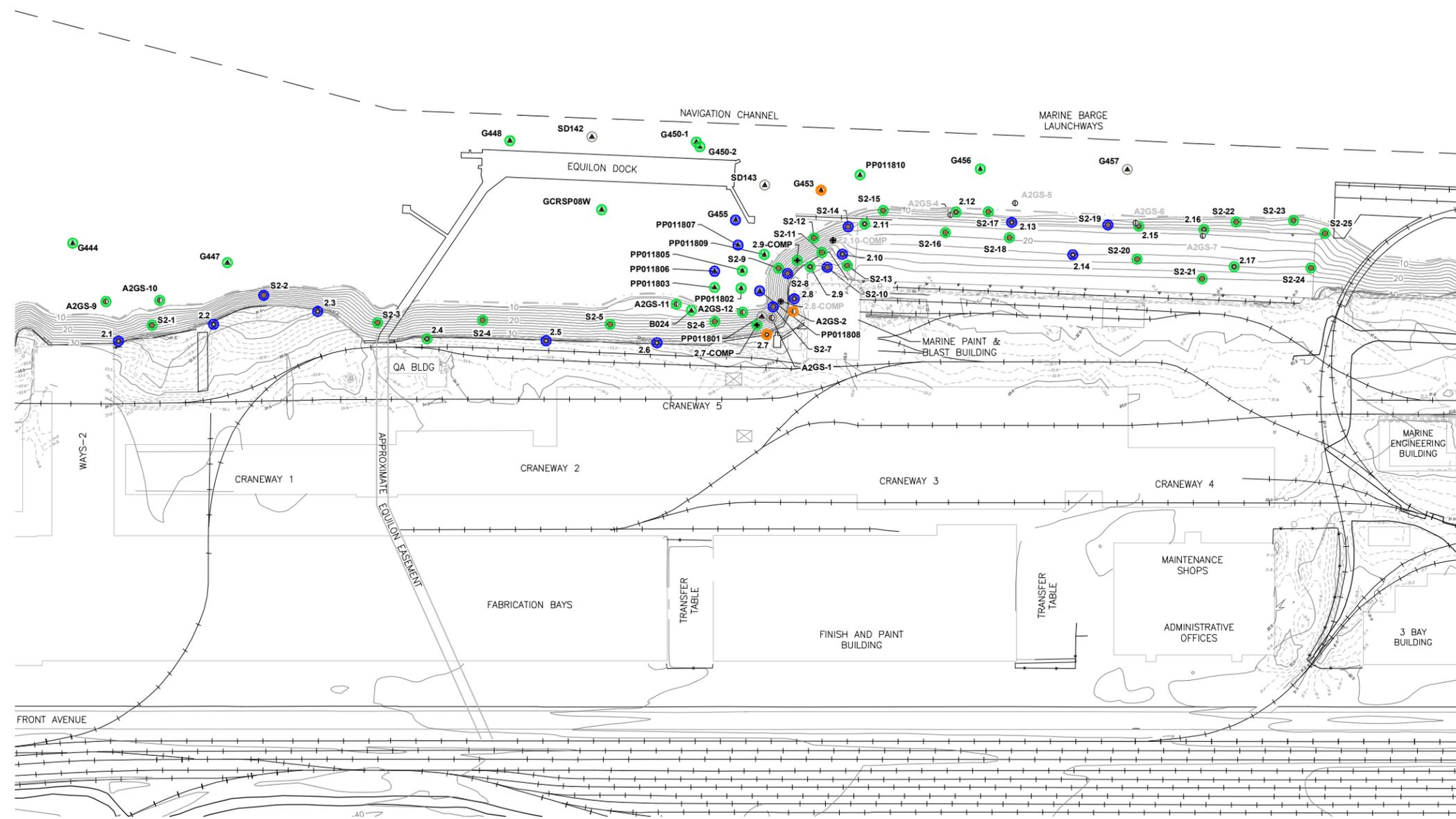
Magnitude of Exceedance above PRG Screening Level in Sediment:

- No Exceedance
- 1 - 5

- NOTES:
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Zinc
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	Project Number	1935-02	Figure
	November 2012	12	

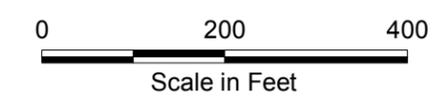
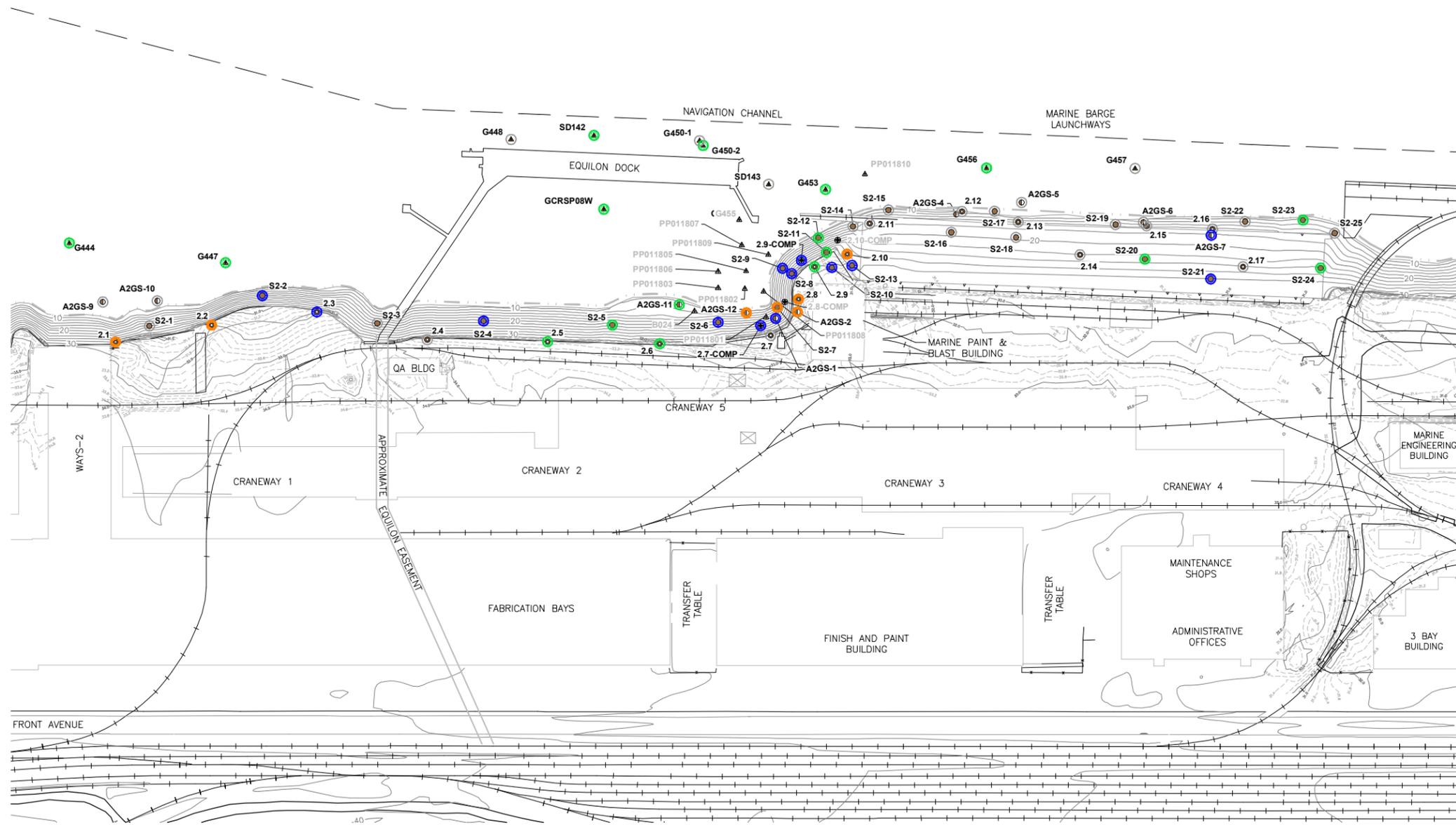


Legend:		Magnitude of Exceedance above JSCS Screening Level in Soil:		Magnitude of Exceedance above PRG Screening Level in Sediment:	
3.10	Vector Borehole Location	○	No Exceedance	○	No Exceedance
S3-14	Riverbank Surface Sample Location	○	1 - 100	○	1 - 10
3.9-COMP	Composite Riverbank Sample Location	○	100.1 - 1,000	○	10.1 - 100
HA-41	Surface Sediment Station Location	○	1,000.1 - 2,200	○	100.1 - 1,000
A2GS-5	Grab Sample (2003)				

- NOTES:
- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
 - 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
 - 3) JSCS = Joint Source Control Strategy
 - 4) PRG = Preliminary Remediation Goal
 - 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
 - 6) Gray indicates that a sample was not analyzed for constituent.
 - 7) PCBs = Polychlorinated Biphenyls

Magnitude of Exceedance above JSCS and PRG Screening Levels - PCBs
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>		Project Number 1935-02	Figure 13
November 2012			



Legend:

- 3.10 Vector Borehole Location
- S3-14 Riverbank Surface Sample Location
- 3.9-COMP Composite Riverbank Sample Location
- HA-41 Surface Sediment Station Location
- A2GS-5 Grab Sample (2003)

Magnitude of Exceedance above JSCS Screening Level in Soil:

- No Exceedance
- 1 - 10
- 10.1 - 100
- 100.1 - 252

Magnitude of Exceedance above PRG Screening Level in Sediment:

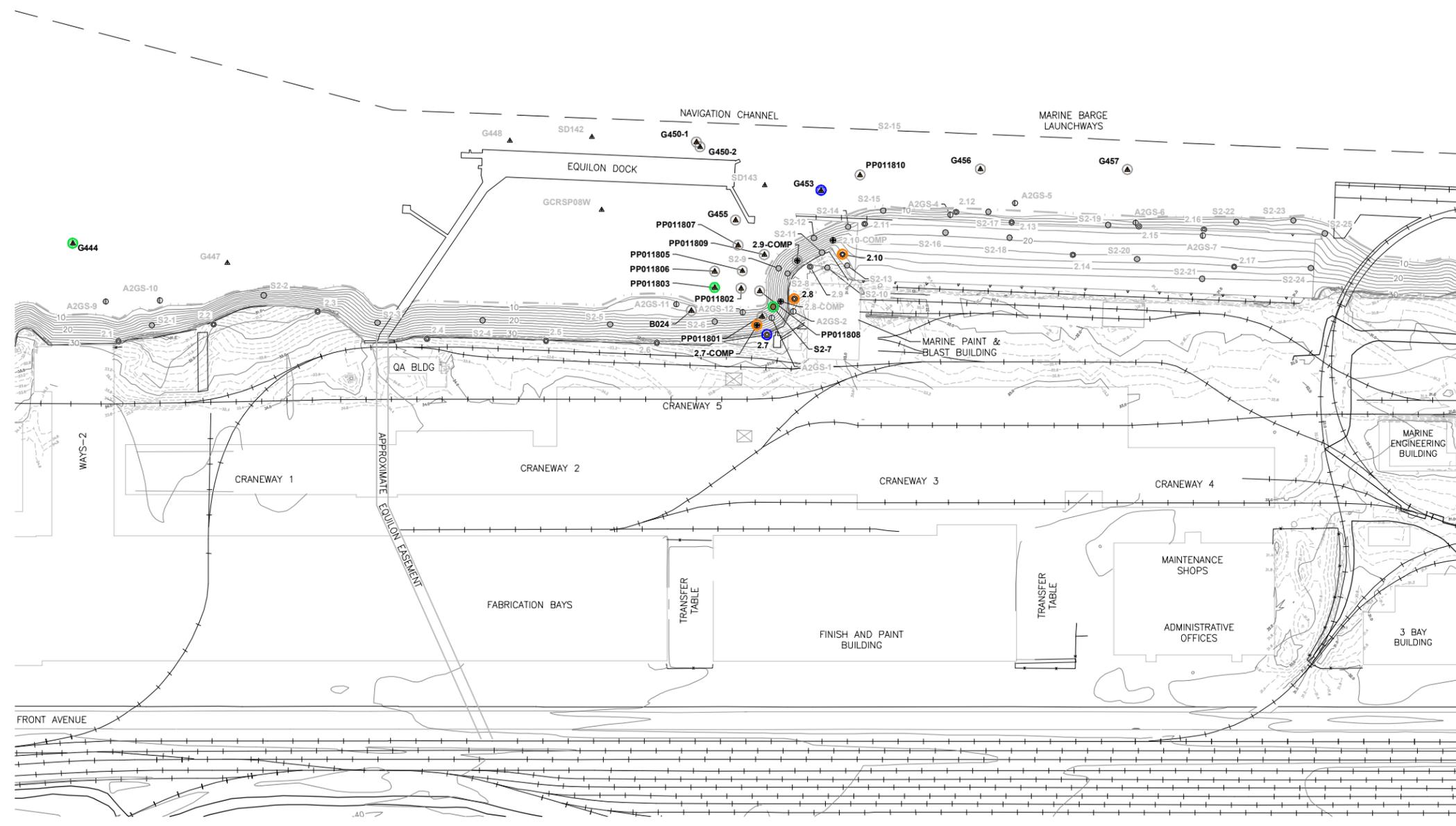
- No Exceedance
- 1 - 10
- 10.1 - 100
- 100.1 - 484

NOTES:

- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
- 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
- 3) JSCS = Joint Source Control Strategy
- 4) PRG = Preliminary Remediation Goal
- 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
- 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Tributyltin
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>		Project Number 1935-02	Figure 16
November 2012			



Legend:

- 3.10 Vector Borehole Location
- S3-14 Riverbank Surface Sample Location
- 3.9-COMP Composite Riverbank Sample Location
- HA-41 Surface Sediment Station Location
- A2GS-5 Grab Sample (2003)

Magnitude of Exceedance above JSCS Screening Level in Soil:

- No Exceedance
- 1 - 10
- 10.1 - 100
- 100.1 - 200

Magnitude of Exceedance above PRG Screening Level in Sediment:

- No Exceedance
- 1 - 10
- 10.1 - 17

NOTES:

- 1) Base map prepared from a Johnson Land Survey and OSP-BASE-STW provided by Gunderson LLC.
- 2) Surface Sediment Stations and Navigation Channel from Map 2.1-1m and Map 2.2-2m provided by Integral Consulting and LWG. All locations and features are approximate.
- 3) JSCS = Joint Source Control Strategy
- 4) PRG = Preliminary Remediation Goal
- 5) Only sample locations that were evaluated for the Source Control Evaluation are shown.
- 6) Gray indicates that a sample was not analyzed for constituent.

Magnitude of Exceedance above JSCS and PRG Screening Levels - Pesticides
 Supplemental Area 2 Riverbank SCE
 Gunderson LLC
 Portland, Oregon

Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	Project Number	1935-02	Figure
	November 2012	18	

Appendix B

Riverbank Soil Analytical Data



Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 20, 2014

Darwin Thomas
Apex Laboratories
12232 SW Garden Place
Tigard, OR 97223

Client Project: A4J0829
ARI Job No.: ZJ04

Dear Mr. Thomas:

Please find enclosed the original Chain of Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this report and all supporting raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: ZJ04

Enclosures



Cooler Receipt Form

ARI Client: Apex
 COC No(s): _____ (NA)
 Assigned ARI Job No: 2104

Project Name: A4J0829
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: 1ZK4720R1398870620 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4.2
 Time 1025

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877352
 Cooler Accepted by: JM Date: 11/4/14 Time: 1025

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? NA YES NO
 Were all bottles sealed in individual plastic bags? YES NO
 Did all bottles arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? YES NO
 Did the number of containers listed on COC match with the number of containers received? YES NO
 Did all bottle labels and tags agree with custody papers? YES NO
 Were all bottles used correct for the requested analyses? YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO
 Date VOC Trip Blank was made at ARI: NA _____
 Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 11/4/14 Time: 1512

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

<p>Small Air Bubbles ~2mm</p>	<p>Peabubbles 2-4 mm</p>	<p>LARGE Air Bubbles > 4 mm</p>	Small → "sm" (< 2 mm) Peabubbles → "pb" (2 to < 4 mm) Large → "lg" (4 to < 6 mm) Headspace → "hs" (> 6 mm)
-----------------------------------	------------------------------	--	---



Case Narrative

Client: Apex Laboratories
Project: A4J0829
ARI Job No.: ZJ04

Sample Receipt

Analytical Resources, Inc. (ARI) accepted two soil samples on November 4, 2014 under ARI job ZJ04. The cooler temperature measured by IR thermometer following ARI SOP was 4.2°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The samples were analyzed for parameters as requested on the COC.

Tributyltin by SW8270-SIM/Krone

There were no irregularities with this analysis.

Sample ID Cross Reference Report



ARI Job No: ZJ04
Client: Apex Laboratories
Project Event: A4J0829
Project Name: N/A

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. S-28	ZJ04A	14-24137	Soil	10/27/14 13:30	11/04/14 10:25
2. S-29	ZJ04B	14-24138	Soil	10/27/14 13:35	11/04/14 10:25

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS
Extraction Method: SW3546
 Page 1 of 1

Sample ID: S-28
SAMPLE

Lab Sample ID: ZJ04A
 LIMS ID: 14-24137
 Matrix: Soil
 Data Release Authorized: *AS*
 Reported: 11/19/14

QC Report No: ZJ04-Apex Laboratories
 Project: A4J0829
 Event: NA
 Date Sampled: 10/27/14
 Date Received: 11/04/14

Date Extracted: 11/10/14
 Date Analyzed: 11/19/14 14:09
 Instrument/Analyst: NT12/VTS
 Silica Gel Cleanup: No

Sample Amount: 5.79 g-dry-wt
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes
 Moisture: 17.8%

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	1.3	3.3	240	

Reported in µg/kg (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	50.4%
Tripropyl Tin Chloride	60.6%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS
Extraction Method: SW3546
 Page 1 of 1

Sample ID: S-29
SAMPLE

Lab Sample ID: ZJ04B
 LIMS ID: 14-24138
 Matrix: Soil
 Data Release Authorized: 
 Reported: 11/19/14

QC Report No: ZJ04-Apex Laboratories
 Project: A4J0829
 Event: NA
 Date Sampled: 10/27/14
 Date Received: 11/04/14

Date Extracted: 11/10/14
 Date Analyzed: 11/19/14 14:23
 Instrument/Analyst: NT12/VTS
 Silica Gel Cleanup: No

Sample Amount: 5.68 g-dry-wt
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes
 Moisture: 19.2%

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	1.3	3.4	240	

Reported in µg/kg (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	52.4%
Tripenyl Tin Chloride	66.2%

TBT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ZJ04-Apex Laboratories
Project: A4J0829
Event: NA

<u>Client ID</u>	<u>TPRT</u>	<u>TPNT</u>	<u>TOT OUT</u>
MB-111014	62.6%	78.6%	0
LCS-111014	65.3%	82.1%	0
LCSD-111014	63.6%	82.6%	0
S-28	50.4%	60.6%	0
S-29	52.4%	66.2%	0

QC LIMITS

(TPRT) = Tripropyl Tin Chloride (25-120)
(TPNT) = Tripentyl Tin Chloride (40-120)

Prep Method: SW3546
Analytical Method: TBT (Hexyl) 8270D-SIM
Log Number Range: 14-24137 to 14-24138

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS
 Page 1 of 1

Sample ID: LCS-111014
LAB CONTROL SAMPLE

Lab Sample ID: LCS-111014
 LIMS ID: 14-24137
 Matrix: Soil
 Data Release Authorized: *RB*
 Reported: 11/19/14

QC Report No: ZJ04-Apex Laboratories
 Project: A4J0829

Date Sampled: NA
 Date Received: NA

Date Extracted LCS: 11/10/14

Sample Amount LCS: 5.00 g-dry-wt
 LCSD: 5.00 g-dry-wt

Date Analyzed LCS: 11/19/14 13:42
 LCSD: 11/19/14 13:56

Final Extract Volume LCS: 0.50 mL
 LCSD: 0.50 mL

Instrument/Analyst LCS: NT12/VTS
 LCSD: NT12/VTS

Dilution Factor LCS: 1.00
 LCSD: 1.00

Silica Gel Cleanup: No

Alumina Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Tributyltin Ion	39.3	44.6	88.1%	38.8	44.6	87.0%	1.3%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

TBT Surrogate Recovery

	LCS	LCSD
Tripropyl Tin Chloride	65.3%	63.6%
Tripenyl Tin Chloride	82.1%	82.6%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS
Extraction Method: SW3546
 Page 1 of 1

Sample ID: MB-111014
METHOD BLANK

Lab Sample ID: MB-111014
 LIMS ID: 14-24137
 Matrix: Soil
 Data Release Authorized: *[Signature]*
 Reported: 11/19/14

QC Report No: ZJ04-Apex Laboratories
 Project: A4J0829
 Event: NA
 Date Sampled: NA
 Date Received: NA

Date Extracted: 11/10/14
 Date Analyzed: 11/19/14 13:28
 Instrument/Analyst: NT12/VTS
 Silica Gel Cleanup: No

Sample Amount: 5.00 g-dry-wt
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	1.5	3.9	< 3.9	U

Reported in µg/kg (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	62.6%
Tripropyl Tin Chloride	78.6%

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, November 21, 2014

Chris Breemer
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: Gunderson / 1935-02.001

Enclosed are the results of analyses for work order A4J0829, which was received by the laboratory on 10/29/2014 at 4:52:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-28	A4J0829-01	Soil	10/27/14 13:30	10/29/14 16:52
S-29	A4J0829-02	Soil	10/27/14 13:35	10/29/14 16:52

Apex Laboratories



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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
 3015 SW First Avenue
 Portland, OR 97201

Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

Reported:
 11/21/14 13:44

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting		Units	Dilution	Date Analyzed	Method	Notes
			Limit						
S-28 (A4J0829-01)			Matrix: Soil		Batch: 4110273			C-07	
Aroclor 1016	ND	5.77	11.5		ug/kg dry	1	11/12/14 11:52	EPA 8082A	
Aroclor 1221	ND	5.77	11.5		"	"	"	"	
Aroclor 1232	ND	5.77	11.5		"	"	"	"	
Aroclor 1242	ND	5.77	11.5		"	"	"	"	
Aroclor 1248	ND	5.77	11.5		"	"	"	"	
Aroclor 1254	73.6	5.77	11.5		"	"	"	"	P-10, Q-42
Aroclor 1260	96.1	5.77	11.5		"	"	"	"	P-10, Q-42
<i>Surrogate: Decachlorobiphenyl (Surr)</i>									
		<i>Recovery: 95 %</i>		<i>Limits: 72-126 %</i>					

S-29 (A4J0829-02)			Matrix: Soil		Batch: 4110273			C-07	
Aroclor 1016	ND	5.81	11.6		ug/kg dry	1	11/12/14 13:41	EPA 8082A	
Aroclor 1221	ND	5.81	11.6		"	"	"	"	
Aroclor 1232	ND	5.81	11.6		"	"	"	"	
Aroclor 1242	7.37	5.81	11.6		"	"	"	"	J
Aroclor 1248	ND	5.81	11.6		"	"	"	"	
Aroclor 1254	77.5	5.81	11.6		"	"	"	"	P-10
Aroclor 1260	120	5.81	11.6		"	"	"	"	P-10
<i>Surrogate: Decachlorobiphenyl (Surr)</i>									
		<i>Recovery: 107 %</i>		<i>Limits: 72-126 %</i>					

Apex Laboratories

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
 3015 SW First Avenue
 Portland, OR 97201

Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

Reported:
 11/21/14 13:44

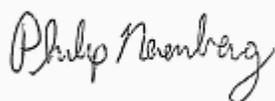
ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting		Units	Dilution	Date Analyzed	Method	Notes
			Limit						
S-28 (A4J0829-01RE1)			Matrix: Soil		Batch: 4110165			C-05	
Aldrin	ND	0.820	1.63		ug/kg dry	1	11/13/14 16:44	EPA 8081B	
alpha-BHC	ND	2.26	2.26		"	"	"	"	R-02
beta-BHC	ND	0.820	1.63		"	"	"	"	
delta-BHC	ND	1.63	1.63		"	"	"	"	
gamma-BHC (Lindane)	ND	0.820	1.63		"	"	"	"	
cis-Chlordane	ND	0.820	1.63		"	"	"	"	
trans-Chlordane	ND	0.820	1.63		"	"	"	"	
4,4'-DDD	ND	1.87	1.87		"	"	"	"	R-02
4,4'-DDE	ND	1.63	1.63		"	"	"	"	
4,4'-DDT	ND	6.38	6.38		"	"	"	"	R-02
Dieldrin	ND	3.19	3.19		"	"	"	"	R-02
Endosulfan I	ND	0.820	1.63		"	"	"	"	
Endosulfan II	ND	1.63	1.63		"	"	"	"	
Endosulfan sulfate	ND	1.63	1.63		"	"	"	"	
Endrin	ND	1.63	1.63		"	"	"	"	
Endrin Aldehyde	ND	1.63	1.63		"	"	"	"	
Endrin ketone	ND	2.16	2.16		"	"	"	"	R-02
Heptachlor	ND	0.820	1.63		"	"	"	"	
Heptachlor epoxide	ND	0.820	1.63		"	"	"	"	
Methoxychlor	ND	6.87	6.87		"	"	"	"	R-02
Chlordane (Technical)	ND	24.5	49.1		"	"	"	"	
Toxaphene (Total)	ND	24.5	49.1		"	"	"	"	
cis-Nonachlor	ND	1.63	1.63		"	"	"	"	
2,4'-DDD	ND	2.31	2.31		"	"	"	"	R-02
2,4'-DDE	ND	0.820	1.63		"	"	"	"	
2,4'-DDT	ND	1.63	1.63		"	"	"	"	
Hexachlorobenzene	ND	2.45	4.91		"	"	"	"	
Hexachlorobutadiene	ND	0.820	1.63		"	"	"	"	
Mirex	ND	1.63	1.63		"	"	"	"	
Oxychlordane	ND	1.63	1.63		"	"	"	"	
trans-Nonachlor	ND	0.820	1.63		"	"	"	"	
<i>Surrogate: 2,4,5,6-TCMX (Surr)</i>				<i>Recovery: 49 %</i>	<i>Limits: 42-129 %</i>	"	"	"	
<i>Decachlorobiphenyl (Surr)</i>				<i>51 %</i>	<i>Limits: 65-151 %</i>	"	"	"	<i>S-03</i>

Apex Laboratories

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting		Units	Dilution	Date Analyzed	Method	Notes
			Limit	Matrix: Soil					
S-29 (A4J0829-02RE1)			Batch: 4110165			C-05			
Aldrin	ND	0.833	1.66	ug/kg dry	1	11/13/14 18:29	EPA 8081B		
alpha-BHC	ND	1.66	1.66	"	"	"	"		Q-42
beta-BHC	ND	0.833	1.66	"	"	"	"		
delta-BHC	ND	0.833	1.66	"	"	"	"		
gamma-BHC (Lindane)	ND	0.833	1.66	"	"	"	"		Q-42
cis-Chlordane	ND	0.833	1.66	"	"	"	"		
trans-Chlordane	ND	0.833	1.66	"	"	"	"		
4,4'-DDD	ND	1.95	1.95	"	"	"	"		R-02
4,4'-DDE	ND	2.30	2.30	"	"	"	"		R-02
4,4'-DDT	ND	6.09	6.09	"	"	"	"		Q-42, R-02
Dieldrin	ND	3.09	3.09	"	"	"	"		R-02
Endosulfan I	ND	0.833	1.66	"	"	"	"		
Endosulfan II	ND	0.833	1.66	"	"	"	"		
Endosulfan sulfate	ND	0.833	1.66	"	"	"	"		Q-42
Endrin	ND	2.74	2.74	"	"	"	"		Q-42, R-02
Endrin Aldehyde	ND	1.66	1.66	"	"	"	"		
Endrin ketone	ND	2.05	2.05	"	"	"	"		R-02, Q-42
Heptachlor	ND	0.833	1.66	"	"	"	"		Q-42
Heptachlor epoxide	ND	0.833	1.66	"	"	"	"		
Methoxychlor	ND	7.49	7.49	"	"	"	"		Q-42, R-02
Chlordane (Technical)	ND	25.0	49.9	"	"	"	"		
Toxaphene (Total)	ND	25.0	49.9	"	"	"	"		
cis-Nonachlor	ND	1.66	1.66	"	"	"	"		
2,4'-DDD	ND	2.69	2.69	"	"	"	"		R-02
2,4'-DDE	ND	0.833	1.66	"	"	"	"		Q-42
2,4'-DDT	ND	0.833	1.66	"	"	"	"		Q-42
Hexachlorobenzene	ND	2.50	4.99	"	"	"	"		
Hexachlorobutadiene	ND	0.833	1.66	"	"	"	"		Q-42
Mirex	ND	2.05	2.05	"	"	"	"		Q-42, R-02
Oxychlordane	ND	0.833	1.66	"	"	"	"		Q-42
trans-Nonachlor	ND	0.833	1.66	"	"	"	"		Q-42
Surrogate: 2,4,5,6-TCMX (Surr)		Recovery: 59 %		Limits: 42-129 %		"	"		
Decachlorobiphenyl (Surr)		70 %		Limits: 65-151 %		"	"		

Apex Laboratories

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

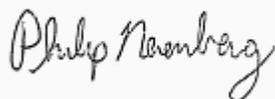
ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
S-28 (A4J0829-01RE1)			Matrix: Soil		Batch: 4110103			
Acenaphthene	ND	114	227	ug/kg dry	20	11/06/14 10:25	EPA 8270D	
Acenaphthylene	ND	114	227	"	"	"	"	
Anthracene	ND	114	227	"	"	"	"	
Benz(a)anthracene	260	114	227	"	"	"	"	
Benzo(a)pyrene	402	114	227	"	"	"	"	
Benzo(b)fluoranthene	770	114	227	"	"	"	"	
Benzo(k)fluoranthene	230	114	227	"	"	"	"	
Benzo(g,h,i)perylene	443	114	227	"	"	"	"	
Chrysene	405	114	227	"	"	"	"	
Dibenz(a,h)anthracene	ND	114	227	"	"	"	"	
Fluoranthene	477	114	227	"	"	"	"	
Fluorene	ND	114	227	"	"	"	"	
Indeno(1,2,3-cd)pyrene	484	114	227	"	"	"	"	
1-Methylnaphthalene	ND	227	454	"	"	"	"	
2-Methylnaphthalene	ND	227	454	"	"	"	"	
Naphthalene	ND	227	454	"	"	"	"	
Phenanthrene	366	114	227	"	"	"	"	
Pyrene	410	114	227	"	"	"	"	
Carbazole	ND	170	341	"	"	"	"	
Dibenzofuran	ND	114	227	"	"	"	"	
Bis(2-ethylhexyl)phthalate	2630	1140	2270	"	"	"	"	
Butyl benzyl phthalate	ND	1140	2270	"	"	"	"	
Diethylphthalate	1140	1140	2270	"	"	"	"	J
Dimethylphthalate	ND	1140	2270	"	"	"	"	
Di-n-butylphthalate	ND	1140	2270	"	"	"	"	
Di-n-octyl phthalate	ND	2270	4540	"	"	"	"	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 81 %</i>		<i>Limits: 37-122 %</i>	"	"	"	<i>Q-41, S-05</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>60 %</i>		<i>Limits: 44-115 %</i>	"	"	"	<i>S-05</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>77 %</i>		<i>Limits: 54-127 %</i>	"	"	"	<i>S-05</i>

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Apex Companies, LLC
3015 SW First Avenue
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Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

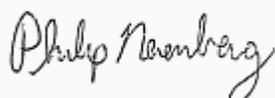
Reported:
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
S-29 (A4J0829-02RE1)			Matrix: Soil		Batch: 4110103			
Acenaphthene	ND	118	237	ug/kg dry	20	11/06/14 11:37	EPA 8270D	
Acenaphthylene	ND	118	237	"	"	"	"	
Anthracene	ND	118	237	"	"	"	"	
Benz(a)anthracene	270	118	237	"	"	"	"	
Benzo(a)pyrene	347	118	237	"	"	"	"	
Benzo(b)fluoranthene	677	118	237	"	"	"	"	
Benzo(k)fluoranthene	222	118	237	"	"	"	"	J
Benzo(g,h,i)perylene	350	118	237	"	"	"	"	
Chrysene	431	118	237	"	"	"	"	
Dibenz(a,h)anthracene	136	118	237	"	"	"	"	J
Fluoranthene	544	118	237	"	"	"	"	
Fluorene	ND	118	237	"	"	"	"	
Indeno(1,2,3-cd)pyrene	360	118	237	"	"	"	"	
1-Methylnaphthalene	ND	237	473	"	"	"	"	
2-Methylnaphthalene	ND	237	473	"	"	"	"	
Naphthalene	ND	237	473	"	"	"	"	
Phenanthrene	464	118	237	"	"	"	"	
Pyrene	427	118	237	"	"	"	"	
Carbazole	ND	177	355	"	"	"	"	
Dibenzofuran	ND	118	237	"	"	"	"	
Bis(2-ethylhexyl)phthalate	4890	1180	2370	"	"	"	"	
Butyl benzyl phthalate	ND	1180	2370	"	"	"	"	
Diethylphthalate	1820	1180	2370	"	"	"	"	J
Dimethylphthalate	ND	1180	2370	"	"	"	"	
Di-n-butylphthalate	ND	1180	2370	"	"	"	"	
Di-n-octyl phthalate	ND	2370	4730	"	"	"	"	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 76 %</i>		<i>Limits: 37-122 %</i>	"	"	"	<i>Q-41, S-05</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>66 %</i>		<i>Limits: 44-115 %</i>	"	"	"	<i>S-05</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>90 %</i>		<i>Limits: 54-127 %</i>	"	"	"	<i>S-05</i>

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 Portland, OR 97201

Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

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 11/21/14 13:44

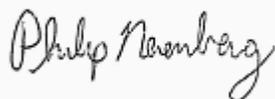
ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
S-28 (A4J0829-01) Matrix: Soil								
Batch: 4110299								
Arsenic	10.7	0.663	1.33	mg/kg dry	10	11/12/14 15:33	EPA 6020A	
Barium	170	0.663	1.33	"	"	"	"	
Cadmium	2.09	0.133	0.265	"	"	"	"	
Chromium	52.1	0.663	1.33	"	"	"	"	
Copper	443	0.663	1.33	"	"	"	"	
Lead	152	0.133	0.265	"	"	"	"	
Manganese	944	0.663	1.33	"	"	"	"	
Mercury	ND	0.0530	0.106	"	"	"	"	
Nickel	20.5	0.663	1.33	"	"	"	"	
Selenium	ND	0.663	1.33	"	"	"	"	
Silver	0.278	0.133	0.265	"	"	"	"	
S-28 (A4J0829-01RE1) Matrix: Soil								
Batch: 4110299								
Zinc	7270	26.5	53.0	mg/kg dry	100	11/19/14 14:04	EPA 6020A	
S-29 (A4J0829-02) Matrix: Soil								
Batch: 4110299								
Arsenic	20.0	0.681	1.36	mg/kg dry	10	11/12/14 15:41	EPA 6020A	
Barium	278	0.681	1.36	"	"	"	"	
Cadmium	3.82	0.136	0.272	"	"	"	"	
Chromium	77.0	0.681	1.36	"	"	"	"	
Copper	849	0.681	1.36	"	"	"	"	
Lead	215	0.136	0.272	"	"	"	"	
Mercury	0.0659	0.0544	0.109	"	"	"	"	J
Nickel	50.0	0.681	1.36	"	"	"	"	
Selenium	ND	0.681	1.36	"	"	"	"	
Silver	0.558	0.136	0.272	"	"	"	"	
S-29 (A4J0829-02RE1) Matrix: Soil								
Batch: 4110299								
Manganese	1670	6.81	13.6	mg/kg dry	100	11/13/14 18:02	EPA 6020A	
Zinc	7290	27.2	54.4	"	"	"	"	

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 Project Manager: Chris Breemer

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
S-28 (A4J0829-01)			Matrix: Soil		Batch: 4100940			
% Solids	80.6	1.00	1.00	% by Weight	1	11/03/14 09:44	EPA 8000C	
S-29 (A4J0829-02)			Matrix: Soil		Batch: 4100940			
% Solids	79.0	1.00	1.00	% by Weight	1	11/03/14 09:44	EPA 8000C	

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Project Number: 1935-02.001
Project Manager: Chris Breemer

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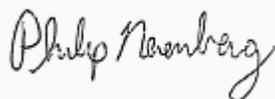
QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110273 - EPA 3546						Soil						
Blank (4110273-BLK1)						Prepared: 11/11/14 08:41 Analyzed: 11/12/14 11:15						C-07
EPA 8082A												
Aroclor 1016	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	1.82	3.64	"	"	---	---	---	---	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 72-111 %</i>		<i>Dilution: 1x</i>						
LCS (4110273-BS1)						Prepared: 11/11/14 08:41 Analyzed: 11/12/14 11:33						C-07
EPA 8082A												
Aroclor 1016	202	2.00	4.00	ug/kg wet	1	250	---	81	47-134%	---	---	
Aroclor 1260	257	2.00	4.00	"	"	"	---	103	53-140%	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 72-111 %</i>		<i>Dilution: 1x</i>						
Duplicate (4110273-DUP1)						Prepared: 11/11/14 08:41 Analyzed: 11/12/14 12:46						C-07
QC Source Sample: S-28 (A4J0829-01)												
EPA 8082A												
Aroclor 1016	ND	6.01	12.0	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	6.01	12.0	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	6.01	12.0	"	"	---	ND	---	---	---	30%	
Aroclor 1242	9.69	6.01	12.0	"	"	---	ND	---	---	---	30%	J
Aroclor 1248	ND	6.01	12.0	"	"	---	ND	---	---	---	30%	
Aroclor 1254	109	6.01	12.0	"	"	---	73.6	---	---	39	30%	P-10, Q-17
Aroclor 1260	145	6.01	12.0	"	"	---	96.1	---	---	41	30%	P-10, Q-17
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 72-111 %</i>		<i>Dilution: 1x</i>						
Matrix Spike (4110273-MS1)						Prepared: 11/11/14 08:41 Analyzed: 11/12/14 14:35						C-07
QC Source Sample: S-29 (A4J0829-02)												
EPA 8082A												
Aroclor 1016	256	5.88	11.8	ug/kg dry	1	294	ND	87	47-134%	---	---	
Aroclor 1260	495	5.88	11.8	"	"	"	120	128	53-140%	---	---	

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC 3015 SW First Avenue Portland, OR 97201	Project: Gunderson Project Number: 1935-02.001 Project Manager: Chris Breemer	Reported: 11/21/14 13:44
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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110273 - EPA 3546						Soil						
Matrix Spike (4110273-MS1)						Prepared: 11/11/14 08:41 Analyzed: 11/12/14 14:35						C-07
QC Source Sample: S-29 (A4J0829-02)												
<i>Surr: Decachlorobiphenyl (Surr)</i>			<i>Recovery: 112 %</i>			<i>Limits: 72-111 %</i>			<i>Dilution: 1x</i>			<i>S-04</i>

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Portland, OR 97201

Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

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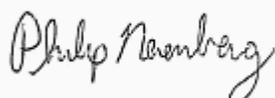
QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110165 - EPA 3546/3640A (GPC)						Soil						
Blank (4110165-BLK1)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 12:32						C-05
EPA 8081B												
Aldrin	ND	0.323	0.645	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	0.323	0.645	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.323	0.645	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.323	0.645	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.323	0.645	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.323	0.645	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.323	0.645	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.323	0.645	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.323	0.645	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Endrin	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Methoxychlor	ND	0.968	1.94	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	9.68	19.4	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	9.68	19.4	"	"	---	---	---	---	---	---	
cis-Nonachlor	ND	0.323	0.645	"	"	---	---	---	---	---	---	
2,4'-DDD	ND	0.323	0.645	"	"	---	---	---	---	---	---	
2,4'-DDE	ND	0.323	0.645	"	"	---	---	---	---	---	---	
2,4'-DDT	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.968	1.94	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Mirex	ND	0.323	0.645	"	"	---	---	---	---	---	---	
Oxychlordane	ND	0.323	0.645	"	"	---	---	---	---	---	---	

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Project: **Gunderson**
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Project Manager: Chris Breemer

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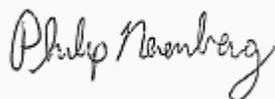
QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110165 - EPA 3546/3640A (GPC)						Soil						
Blank (4110165-BLK1)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 12:32						C-05
trans-Nonachlor	ND	0.323	0.645	ug/kg wet	"	---	---	---	---	---	---	
<i>Surr: 2,4,5,6-TCMX (Surr)</i>			Recovery: 77 %		Limits: 42-129 %		Dilution: 1x					
<i>Decachlorobiphenyl (Surr)</i>			97 %		65-151 %		"					
LCS (4110165-BS1)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 12:49						C-05
EPA 8081B												
Aldrin	50.9	1.00	2.00	ug/kg wet	1	50.0	---	102	45-136%	---	---	
alpha-BHC	53.5	1.00	2.00	"	"	"	---	107	45-137%	---	---	
beta-BHC	53.1	1.00	2.00	"	"	"	---	106	50-136%	---	---	
delta-BHC	57.6	1.00	2.00	"	"	"	---	115	47-139%	---	---	
gamma-BHC (Lindane)	54.1	1.00	2.00	"	"	"	---	108	49-135%	---	---	
cis-Chlordane	60.0	1.00	2.00	"	"	"	---	120	54-133%	---	---	
trans-Chlordane	59.8	1.00	2.00	"	"	"	---	120	53-135%	---	---	
4,4'-DDD	64.8	1.00	2.00	"	"	"	---	130	56-139%	---	---	
4,4'-DDE	62.0	1.00	2.00	"	"	"	---	124	56-134%	---	---	
4,4'-DDT	74.6	1.00	2.00	"	"	"	---	149	50-141%	---	---	Q-29
Dieldrin	62.7	1.00	2.00	"	"	"	---	125	56-136%	---	---	
Endosulfan I	61.2	1.00	2.00	"	"	"	---	122	52-132%	---	---	
Endosulfan II	65.9	1.00	2.00	"	"	"	---	132	53-134%	---	---	
Endosulfan sulfate	66.0	1.00	2.00	"	"	"	---	132	55-136%	---	---	
Endrin	66.3	1.00	2.00	"	"	"	---	133	56-140%	---	---	
Endrin Aldehyde	63.5	1.00	2.00	"	"	"	---	127	35-137%	---	---	
Endrin ketone	65.9	1.00	2.00	"	"	"	---	132	55-136%	---	---	
Heptachlor	54.6	1.00	2.00	"	"	"	---	109	47-136%	---	---	
Heptachlor epoxide	59.2	1.00	2.00	"	"	"	---	118	52-136%	---	---	
Methoxychlor	82.8	3.00	6.00	"	"	"	---	166	52-143%	---	---	Q-29
<i>Surr: 2,4,5,6-TCMX (Surr)</i>			Recovery: 85 %		Limits: 42-129 %		Dilution: 1x					
<i>Decachlorobiphenyl (Surr)</i>			108 %		65-151 %		"					
LCS (4110165-BS2)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 13:07						C-05
EPA 8081B												
cis-Nonachlor	65.8	1.00	2.00	ug/kg wet	1	50.0	---	132	58-142%	---	---	

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Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

Reported:
 11/21/14 13:44

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110165 - EPA 3546/3640A (GPC)						Soil						
LCS (4110165-BS2)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 13:07						C-05
2,4'-DDD	67.2	1.00	2.00	ug/kg wet	"	"	---	134	75-130%	---	---	Q-29
2,4'-DDE	64.6	1.00	2.00	"	"	"	---	129	74-131%	---	---	
2,4'-DDT	68.1	1.00	2.00	"	"	"	---	136	64-136%	---	---	
Hexachlorobenzene	61.3	3.00	6.00	"	"	"	---	123	57-126%	---	---	
Hexachlorobutadiene	41.9	1.00	2.00	"	"	"	---	84	38-109%	---	---	
Mirex	63.6	1.00	2.00	"	"	"	---	127	65-128%	---	---	
Oxychlorane	61.6	1.00	2.00	"	"	"	---	123	61-132%	---	---	
trans-Nonachlor	61.7	1.00	2.00	"	"	"	---	123	58-134%	---	---	

Surr: 2,4,5,6-TCMX (Surr) Recovery: 101 % Limits: 42-129 % Dilution: 1x
 Decachlorobiphenyl (Surr) 113 % 65-151 % "

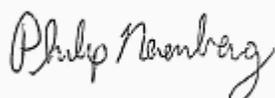
Duplicate (4110165-DUP1) Prepared: 11/06/14 11:54 Analyzed: 11/13/14 17:36 **C-05**

QC Source Sample: S-28 (A4J0829-01RE1)

EPA 8081B												
Aldrin	ND	0.810	1.62	ug/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	2.38	2.38	"	"	---	ND	---	---	---	30%	R-02
beta-BHC	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
delta-BHC	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
cis-Chlordane	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
trans-Chlordane	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.89	1.89	"	"	---	ND	---	---	---	30%	R-02
4,4'-DDE	ND	1.62	1.62	"	"	---	ND	---	---	---	30%	
4,4'-DDT	ND	5.34	5.34	"	"	---	ND	---	---	---	30%	R-02
Dieldrin	ND	3.25	3.30	"	"	---	ND	---	---	---	30%	R-02
Endosulfan I	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Endosulfan II	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Endrin	ND	1.62	1.62	"	"	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Endrin ketone	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Heptachlor	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	

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3015 SW First Avenue
Portland, OR 97201

Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110165 - EPA 3546/3640A (GPC)						Soil						
Duplicate (4110165-DUP1)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 17:36						C-05
QC Source Sample: S-28 (A4J0829-01RE1)												
Heptachlor epoxide	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Methoxychlor	ND	4.85	4.85	"	"	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	24.3	48.5	"	"	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	24.3	48.5	"	"	---	ND	---	---	---	30%	
cis-Nonachlor	ND	1.62	1.62	"	"	---	ND	---	---	---	30%	
2,4'-DDD	ND	2.38	2.38	"	"	---	ND	---	---	---	30%	R-02
2,4'-DDE	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
2,4'-DDT	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	2.43	4.85	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
Mirex	ND	2.33	2.33	"	"	---	ND	---	---	---	30%	R-02
Oxychlordane	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	
trans-Nonachlor	ND	0.810	1.62	"	"	---	ND	---	---	---	30%	

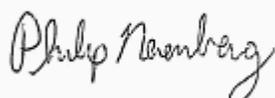
Surr: 2,4,5,6-TCMX (Surr) Recovery: 54 % Limits: 42-129 % Dilution: 1x
Decachlorobiphenyl (Surr) 59 % 65-151 % "

Matrix Spike (4110165-MS1) Prepared: 11/06/14 11:54 Analyzed: 11/13/14 19:23 **C-05**

QC Source Sample: S-29 (A4J0829-02RE1)												
EPA 8081B												
Aldrin	11.6	0.828	1.65	ug/kg dry	1	20.6	ND	56	45-136%	---	---	
alpha-BHC	10.3	0.828	1.65	"	"	"	ND	50	45-137%	---	---	
beta-BHC	15.9	0.828	1.65	"	"	"	ND	77	50-136%	---	---	
delta-BHC	12.5	0.828	1.65	"	"	"	ND	61	47-139%	---	---	
gamma-BHC (Lindane)	6.56	0.828	1.65	"	"	"	ND	32	49-135%	---	---	Q-01
cis-Chlordane	14.7	0.828	1.65	"	"	"	ND	71	54-133%	---	---	
trans-Chlordane	11.2	0.828	1.65	"	"	"	ND	54	53-135%	---	---	
4,4'-DDD	22.5	0.828	1.65	"	"	"	ND	109	56-139%	---	---	Q-41
4,4'-DDE	19.7	0.828	1.65	"	"	"	ND	95	56-134%	---	---	
4,4'-DDT	14.8	0.828	1.65	"	"	"	ND	72	50-141%	---	---	
Dieldrin	16.1	0.828	1.65	"	"	"	ND	78	56-136%	---	---	

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
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Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110165 - EPA 3546/3640A (GPC)						Soil						
Matrix Spike (4110165-MS1)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 19:23						C-05
QC Source Sample: S-29 (A4J0829-02RE1)												
Endosulfan I	14.8	0.828	1.65	ug/kg dry	"	"	ND	72	52-132%	---	---	
Endosulfan II	13.0	0.828	1.65	"	"	"	ND	63	53-134%	---	---	
Endosulfan sulfate	8.59	0.828	1.65	"	"	"	ND	42	55-136%	---	---	Q-01
Endrin	13.1	0.828	1.65	"	"	"	ND	64	56-140%	---	---	
Endrin Aldehyde	11.8	0.828	1.65	"	"	"	ND	57	35-137%	---	---	
Endrin ketone	10.7	0.828	1.65	"	"	"	ND	52	55-136%	---	---	Q-01
Heptachlor	1.14	0.828	1.65	"	"	"	ND	6	47-136%	---	---	J, Q-01
Heptachlor epoxide	12.8	0.828	1.65	"	"	"	ND	62	52-136%	---	---	
Methoxychlor	5.52	2.48	4.96	"	"	"	ND	27	52-143%	---	---	Q-01

Surr: 2,4,5,6-TCMX (Surr) Recovery: 52 % Limits: 42-129 % Dilution: 1x
Decachlorobiphenyl (Surr) 65 % 65-151 % "

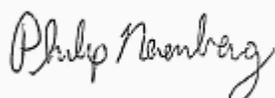
Matrix Spike (4110165-MS2)						Prepared: 11/06/14 11:54 Analyzed: 11/13/14 20:16						C-05
QC Source Sample: S-29 (A4J0829-02RE1)												
EPA 8081B												
cis-Nonachlor	15.1	0.844	1.68	ug/kg dry	1	21.1	ND	72	58-142%	---	---	
2,4'-DDD	17.0	0.844	1.68	"	"	"	ND	81	75-130%	---	---	
2,4'-DDE	17.8	0.844	1.68	"	"	"	6.49	54	74-131%	---	---	Q-01
2,4'-DDT	5.24	0.844	1.68	"	"	"	ND	25	64-136%	---	---	Q-01
Hexachlorobenzene	14.7	2.53	5.06	"	"	"	ND	70	57-126%	---	---	
Hexachlorobutadiene	5.05	0.844	1.68	"	"	"	ND	24	38-109%	---	---	Q-01
Mirex	11.2	0.844	1.68	"	"	"	ND	53	65-128%	---	---	Q-01
Oxychlorane	12.3	0.844	1.68	"	"	"	2.38	47	61-132%	---	---	Q-01
trans-Nonachlor	15.5	0.844	1.68	"	"	"	2.31	62	58-134%	---	---	

Surr: 2,4,5,6-TCMX (Surr) Recovery: 45 % Limits: 42-129 % Dilution: 1x
Decachlorobiphenyl (Surr) 64 % 65-151 % "

S-06

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 Project Number: 1935-02.001
 Project Manager: Chris Breemer

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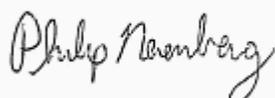
QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110103 - EPA 3546						Soil						
Blank (4110103-BLK1)						Prepared: 11/05/14 09:43 Analyzed: 11/05/14 14:23						
EPA 8270D												
Acenaphthene	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Anthracene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	5.45	10.9	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Chrysene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Fluorene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	3.64	7.27	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	3.64	7.27	"	"	---	---	---	---	---	---	
Naphthalene	ND	3.64	7.27	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Pyrene	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Carbazole	ND	2.73	5.45	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.82	3.64	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.2	36.4	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	18.2	36.4	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	18.2	36.4	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	18.2	36.4	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	18.2	36.4	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	36.4	72.7	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)		Recovery: 92 %		Limits: 37-122 %		Dilution: 1x						
2-Fluorobiphenyl (Surr)		78 %		44-115 %		"						
p-Terphenyl-d14 (Surr)		88 %		54-127 %		"						

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Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

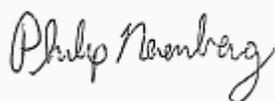
QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110103 - EPA 3546						Soil						
LCS (4110103-BS1)						Prepared: 11/05/14 09:43 Analyzed: 11/05/14 14:58						Q-18
EPA 8270D												
Acenaphthene	620	10.0	20.0	ug/kg wet	5	800	---	77	40-122%	---	---	
Acenaphthylene	628	10.0	20.0	"	"	"	---	78	32-132%	---	---	
Anthracene	637	10.0	20.0	"	"	"	---	80	47-123%	---	---	
Benz(a)anthracene	692	10.0	20.0	"	"	"	---	87	49-126%	---	---	
Benzo(a)pyrene	733	15.0	30.0	"	"	"	---	92	45-129%	---	---	
Benzo(b)fluoranthene	716	15.0	30.0	"	"	"	---	90	45-132%	---	---	
Benzo(k)fluoranthene	719	15.0	30.0	"	"	"	---	90	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1420	30.0	60.0	"	"	1600	---	89	45-132%	---	---	
Benzo(g,h,i)perylene	664	10.0	20.0	"	"	800	---	83	43-134%	---	---	
Chrysene	671	10.0	20.0	"	"	"	---	84	50-124%	---	---	
Dibenz(a,h)anthracene	687	10.0	20.0	"	"	"	---	86	45-134%	---	---	
Fluoranthene	677	10.0	20.0	"	"	"	---	85	50-127%	---	---	
Fluorene	650	10.0	20.0	"	"	"	---	81	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	686	10.0	20.0	"	"	"	---	86	45-133%	---	---	
1-Methylnaphthalene	691	20.0	40.0	"	"	"	---	86	40-120%	---	---	
2-Methylnaphthalene	702	20.0	40.0	"	"	"	---	88	38-122%	---	---	
Naphthalene	639	20.0	40.0	"	"	"	---	80	35-123%	---	---	
Phenanthrene	613	10.0	20.0	"	"	"	---	77	50-121%	---	---	
Pyrene	640	10.0	20.0	"	"	"	---	80	47-127%	---	---	
Carbazole	613	15.0	30.0	"	"	"	---	77	50-122%	---	---	
Dibenzofuran	624	10.0	20.0	"	"	"	---	78	44-120%	---	---	
Bis(2-ethylhexyl)phthalate	764	100	200	"	"	"	---	96	51-133%	---	---	
Butyl benzyl phthalate	733	100	200	"	"	"	---	92	48-132%	---	---	
Diethylphthalate	785	100	200	"	"	"	---	98	50-124%	---	---	
Dimethylphthalate	752	100	200	"	"	"	---	94	48-124%	---	---	
Di-n-butylphthalate	751	100	200	"	"	"	---	94	51-128%	---	---	
Di-n-octyl phthalate	703	200	400	"	"	"	---	88	44-140%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 81 %</i>	<i>Limits: 37-122 %</i>	<i>Dilution: 5x</i>							
<i>2-Fluorobiphenyl (Surr)</i>			<i>71 %</i>	<i>44-115 %</i>	<i>"</i>							
<i>p-Terphenyl-d14 (Surr)</i>			<i>82 %</i>	<i>54-127 %</i>	<i>"</i>							

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Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110103 - EPA 3546						Soil						
Duplicate (4110103-DUP2)						Prepared: 11/05/14 09:43 Analyzed: 11/06/14 11:01						
QC Source Sample: S-28 (A4J0829-01RE1)												
EPA 8270D												
Acenaphthene	ND	118	236	ug/kg dry	20	---	ND	---	---	---	30%	
Acenaphthylene	ND	118	236	"	"	---	ND	---	---	---	30%	
Anthracene	119	118	236	"	"	---	ND	---	---		30%	J
Benzo(a)anthracene	383	118	236	"	"	---	260	---	---	38	30%	Q-05
Benzo(a)pyrene	491	118	236	"	"	---	402	---	---	20	30%	
Benzo(b)fluoranthene	827	118	236	"	"	---	770	---	---	7	30%	
Benzo(k)fluoranthene	331	118	236	"	"	---	230	---	---	36	30%	Q-05
Benzo(b+k)fluoranthene(s)	1240	236	472	"	"	---	1020	---	---	20	30%	
Benzo(g,h,i)perylene	496	118	236	"	"	---	443	---	---	11	30%	
Chrysene	539	118	236	"	"	---	405	---	---	28	30%	
Dibenz(a,h)anthracene	ND	118	236	"	"	---	ND	---	---	---	30%	
Fluoranthene	1070	118	236	"	"	---	477	---	---	77	30%	Q-05
Fluorene	145	118	236	"	"	---	ND	---	---		30%	J
Indeno(1,2,3-cd)pyrene	495	118	236	"	"	---	484	---	---	2	30%	
1-Methylnaphthalene	ND	236	472	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	236	472	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	236	472	"	"	---	ND	---	---	---	30%	
Phenanthrene	1010	118	236	"	"	---	366	---	---	93	30%	Q-05
Pyrene	850	118	236	"	"	---	410	---	---	70	30%	Q-05
Carbazole	181	177	354	"	"	---	ND	---	---		30%	J
Dibenzofuran	124	118	236	"	"	---	ND	---	---		30%	J
Bis(2-ethylhexyl)phthalate	2390	1180	2360	"	"	---	2630	---	---	10	30%	
Butyl benzyl phthalate	ND	1180	2360	"	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	1180	2360	"	"	---	1140	---	---	***	30%	
Dimethylphthalate	ND	1180	2360	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	1180	2360	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	2360	4720	"	"	---	ND	---	---	---	30%	

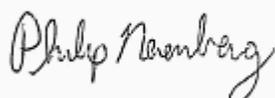
Surr: Nitrobenzene-d5 (Surr)
2-Fluorobiphenyl (Surr)

Recovery: 86 % Limits: 37-122 % Dilution: 20x
67 % 44-115 % "

Q-41, S-05
S-05

Apex Laboratories

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
 3015 SW First Avenue
 Portland, OR 97201

Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

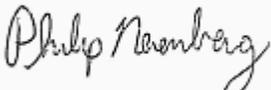
Reported:
 11/21/14 13:44

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110103 - EPA 3546						Soil						
Duplicate (4110103-DUP2)						Prepared: 11/05/14 09:43 Analyzed: 11/06/14 11:01						
QC Source Sample: S-28 (A4J0829-01RE1)												
Surr: <i>p-Terphenyl-d14 (Surr)</i>			Recovery: 79 %			Limits: 54-127 %			Dilution: 20x			S-05

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 Project Number: 1935-02.001
 Project Manager: Chris Breemer

Reported:
 11/21/14 13:44

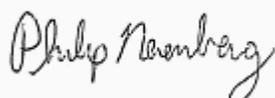
QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110299 - EPA 3051A						Soil						
Blank (4110299-BLK1)						Prepared: 11/11/14 16:00 Analyzed: 11/12/14 15:53						
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	---
Barium	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	---
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	---
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	---
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	---
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	---
LCS (4110299-BS1)						Prepared: 11/11/14 16:00 Analyzed: 11/12/14 15:24						
EPA 6020A												
Arsenic	48.1	0.500	1.00	mg/kg wet	10	50.0	---	96	80-120%	---	---	---
Barium	51.2	0.500	1.00	"	"	"	---	102	"	---	---	---
Cadmium	49.7	0.100	0.200	"	"	"	---	99	"	---	---	---
Chromium	50.8	0.500	1.00	"	"	"	---	101	"	---	---	---
Copper	52.3	0.500	1.00	"	"	"	---	105	"	---	---	---
Lead	51.7	0.100	0.200	"	"	"	---	103	"	---	---	---
Mercury	0.982	0.0400	0.0800	"	"	1.00	---	98	"	---	---	---
Nickel	51.0	0.500	1.00	"	"	50.0	---	102	"	---	---	---
Selenium	25.8	0.500	1.00	"	"	25.0	---	104	"	---	---	---
Silver	25.6	0.100	0.200	"	"	"	---	102	"	---	---	---
Zinc	50.1	2.00	4.00	"	"	50.0	---	100	"	---	---	---
Duplicate (4110299-DUP1)						Prepared: 11/11/14 16:00 Analyzed: 11/12/14 15:56						
QC Source Sample: S-29 (A4J0829-02)												
EPA 6020A												
Arsenic	21.9	0.681	1.36	mg/kg dry	10	---	20.0	---	---	9	40%	---

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
 3015 SW First Avenue
 Portland, OR 97201

Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

Reported:
 11/21/14 13:44

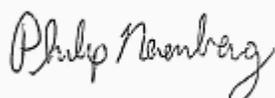
QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110299 - EPA 3051A						Soil						
Duplicate (4110299-DUP1)						Prepared: 11/11/14 16:00 Analyzed: 11/12/14 15:56						
QC Source Sample: S-29 (A4J0829-02)												
Barium	318	0.681	1.36	mg/kg dry	"	---	278	---	---	13	40%	
Cadmium	2.98	0.136	0.272	"	"	---	3.82	---	---	25	40%	
Chromium	111	0.681	1.36	"	"	---	77.0	---	---	36	40%	
Copper	872	0.681	1.36	"	"	---	849	---	---	3	40%	
Lead	230	0.136	0.272	"	"	---	215	---	---	7	40%	
Mercury	ND	0.0544	0.109	"	"	---	0.0659	---	---	***	40%	
Nickel	47.6	0.681	1.36	"	"	---	50.0	---	---	5	40%	
Selenium	ND	0.681	1.36	"	"	---	ND	---	---	---	40%	
Silver	0.612	0.136	0.272	"	"	---	0.558	---	---	9	40%	
Duplicate (4110299-DUP2)						Prepared: 11/11/14 16:00 Analyzed: 11/13/14 18:05						
QC Source Sample: S-29 (A4J0829-02)												
EPA 6020A												
Manganese	1630	6.81	13.6	mg/kg dry	100	---	1650	---	---	1	40%	Q-16
Zinc	4610	27.2	54.4	"	"	---	6760	---	---	38	40%	Q-16
Matrix Spike (4110299-MS1)						Prepared: 11/11/14 16:00 Analyzed: 11/12/14 15:59						
QC Source Sample: S-29 (A4J0829-02)												
EPA 6020A												
Arsenic	78.1	0.681	1.36	mg/kg dry	10	68.1	20.0	85	75-125%	---	---	
Barium	315	0.681	1.36	"	"	"	278	54	"	---	---	Q-04
Cadmium	72.3	0.136	0.272	"	"	"	3.82	101	"	---	---	
Chromium	126	0.681	1.36	"	"	"	77.0	71	"	---	---	Q-04
Copper	788	0.681	1.36	"	"	"	849	-91	"	---	---	Q-04
Lead	250	0.136	0.272	"	"	"	215	52	"	---	---	Q-04
Mercury	1.34	0.0544	0.109	"	"	1.36	0.0659	94	"	---	---	
Nickel	100	0.681	1.36	"	"	68.1	50.0	74	"	---	---	Q-04
Selenium	30.6	0.681	1.36	"	"	34.0	ND	90	"	---	---	
Silver	35.2	0.136	0.272	"	"	"	0.558	102	"	---	---	
Matrix Spike (4110299-MS3)						Prepared: 11/11/14 16:00 Analyzed: 11/13/14 18:08						

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Philip Nerenberg For Darwin Thomas, Business Development Director

Apex Companies, LLC
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 Portland, OR 97201

Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

Reported:
 11/21/14 13:44

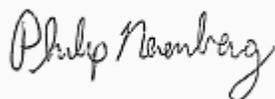
QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4110299 - EPA 3051A						Soil						
Matrix Spike (4110299-MS3)						Prepared: 11/11/14 16:00 Analyzed: 11/13/14 18:08						
QC Source Sample: S-29 (A4J0829-02)												
EPA 6020A												
Manganese	1540	6.81	13.6	mg/kg dry	100	68.1	1650	-162	75-125%	---	---	Q-03, Q-16
Zinc	4430	27.2	54.4	"	"	"	6760	-3410	"	---	---	Q-03, Q-16

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Portland, OR 97201

Project: **Gunderson**
Project Number: 1935-02.001
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11/21/14 13:44

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4100940 - Total Solids (Dry Weight)							Soil					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4110273							
A4J0829-01	Soil	EPA 8082A	10/27/14 13:30	11/11/14 08:41	10.75g/5mL	10g/2mL	2.33
A4J0829-02	Soil	EPA 8082A	10/27/14 13:35	11/11/14 08:41	10.89g/5mL	10g/2mL	2.30

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4110165							
A4J0829-01RE1	Soil	EPA 8081B	10/27/14 13:30	11/06/14 11:54	30.33g/20mL	30g/5mL	3.96
A4J0829-02RE1	Soil	EPA 8081B	10/27/14 13:35	11/06/14 11:54	30.44g/20mL	30g/5mL	3.94

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4110103							
A4J0829-01RE1	Soil	EPA 8270D	10/27/14 13:30	11/05/14 09:43	10.93g/5mL	10g/2mL	2.29
A4J0829-02RE1	Soil	EPA 8270D	10/27/14 13:35	11/05/14 09:43	10.7g/5mL	10g/2mL	2.34

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4110299							
A4J0829-01	Soil	EPA 6020A	10/27/14 13:30	11/11/14 16:00	0.468g/50mL	0.5g/50mL	1.07
A4J0829-01RE1	Soil	EPA 6020A	10/27/14 13:30	11/11/14 16:00	0.468g/50mL	0.5g/50mL	1.07
A4J0829-02	Soil	EPA 6020A	10/27/14 13:35	11/11/14 16:00	0.465g/50mL	0.5g/50mL	1.08
A4J0829-02RE1	Soil	EPA 6020A	10/27/14 13:35	11/11/14 16:00	0.465g/50mL	0.5g/50mL	1.08

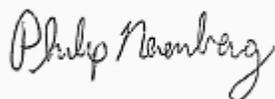
Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4100940							
A4J0829-01	Soil	EPA 8000C	10/27/14 13:30	10/31/14 13:10	1N/A/1N/A	1N/A/1N/A	NA
A4J0829-02	Soil	EPA 8000C	10/27/14 13:35	10/31/14 13:10	1N/A/1N/A	1N/A/1N/A	NA

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Apex Companies, LLC

3015 SW First Avenue
Portland, OR 97201

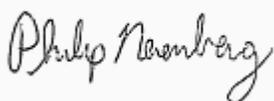
Project: **Gunderson**

Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:

11/21/14 13:44

Apex Laboratories



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Project: **Gunderson**
Project Number: 1935-02.001
Project Manager: Chris Breemer

Reported:
11/21/14 13:44

Notes and Definitions

Qualifiers:

- C-05 Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
- C-07 Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- P-10 Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
- Q-01 Spike recovery and/or RPD is outside acceptance limits.
- Q-03 Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
- Q-04 Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-05 Analyses are not controlled on RPD values from sample or duplicate concentrations below 5 times the reporting level.
- Q-16 Reanalysis of an original Batch QC sample.
- Q-17 RPD between original and duplicate sample is outside of established control limits.
- Q-18 Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
- Q-29 Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-42 Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- R-02 The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-03 Reextraction and analysis, or analysis of laboratory duplicate, confirms surrogate failure due to sample matrix effect.
- S-04 Surrogate recovery is outside of established control limits due to a sample matrix effect.
- S-05 Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- S-06 Surrogate recovery is outside of established control limits.

Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit

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Project Manager: Chris Breemer

Reported:
11/21/14 13:44

- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- *** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Apex Companies, LLC
 3015 SW First Avenue
 Portland, OR 97201

Project: **Gunderson**
 Project Number: 1935-02.001
 Project Manager: Chris Breemer

Reported:
 11/21/14 13:44

CHAIN OF CUSTODY RECORD

Client Name: Apex Companies
 Address: 3015 SW First Ave
 City/State/Zip: Portland, OR 97201

Telephone Number: 503.924.4704
 Fax No.: 503.943.6357

Analytical Lab: Apex Laboratories
 Report To: cbreemer@apexlcs.com
 Page: 2 of 2

Project Manager: Chris Breemer
 Project Name: Gunderson
 Project Number: 1935-02.023
 Sampler Name: Chris Breemer

A-150829



Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Ice	Methanol	HCl	Sodium Borate	HNO3	Matrix				Other (specify):	PCBs (8082)	Metals (8020)	Organochlorine Pesticides (8081A)	Phthalates (8270M)	Analyze For:	RUSH TAT (Pre Schedule)	Standard TAT	Fax Results	Send QC with report	
												Groundwater	Wastewater	Drinking Water	Sludge											Sol
S-30b	10/27/14	13:40		X			X																			
S-30c	10/27/14	13:40		X			X																			

Special Instructions:
 Reporting limits to be at or below JSCS Screening Level Values.
 Values can be provided if necessary.

Relinquished by: Name/Company
 Time Date
 Juel Martekcheck/Apex 1500 10/29/14
 Rachelle Wunderson/Apex 1500 10/29/14

Received by: Name/Company
 Time Date
 Rachelle Wunderson 1500 10/29/14

Relinquished by: Name/Company
 Time Date
 Rachelle Wunderson 1500 10/29/14

Received by: Name/Company
 Time Date
 [Signature] 1500 10/29/14

Bill directly to Gunderson. Copy Sam Gray (sggray@apexlcs.com) on all invoices.

Laboratory Comments:
 Temperature Upon Receipt: N
 VOCs Free of Heat: Y

Philip Nenberg

Appendix C

Imported Soil Analytical Data

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, March 31, 2015

Chris Breemer
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

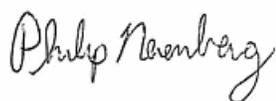
RE: Gunderson / Area 2 Riverbank Interim SCMS / 320001935

Enclosed are the results of analyses for work order A5C0534, which was received by the laboratory on 3/18/2015 at 1:20:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



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Philip Nerenberg, Lab Director

Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

Project: **Gunderson**
Project Number: Area 2 Riverbank Interim SC
Project Manager: Chris Breemer

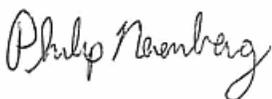
Reported:
03/31/15 17:21

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Soil Stockpile	A5C0534-01	Soil	03/16/15 12:00	03/18/15 13:20

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Philip Nerenberg, Lab Director

Apex Companies, LLC
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 Portland, OR 97201

Project: **Gunderson**
 Project Number: Area 2 Riverbank Interim SC
 Project Manager: Chris Breemer

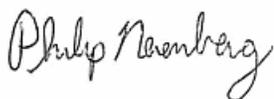
Reported:
 03/31/15 17:21

ANALYTICAL SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil Stockpile (A5C0534-01)			Matrix: Soil		Batch: 5030553			
Diesel	ND	13.4	26.9	mg/kg dry	1	03/20/15 04:13	NWTPH-Dx/SG	
Oil	ND	26.9	53.7	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 79 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Philip Nerenberg, Lab Director

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Apex Companies, LLC
 3015 SW First Avenue
 Portland, OR 97201

Project: **Gunderson**
 Project Number: Area 2 Riverbank Interim SC
 Project Manager: Chris Breemer

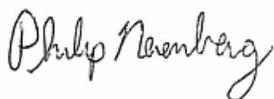
Reported:
 03/31/15 17:21

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil Stockpile (A5C0534-01)			Matrix: Soil		Batch: 5030499			V-16
Gasoline Range Organics	ND	3.01	6.03	mg/kg dry	50	03/18/15 23:56	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>107 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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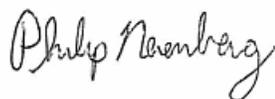
Reported:
 03/31/15 17:21

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting		Units	Dilution	Date Analyzed	Method	Notes
			Limit						
Soil Stockpile (A5C0534-01)			Matrix: Soil		Batch: 5030534			C-07	
Aroclor 1016	ND	1.73	3.45		ug/kg dry	1	03/20/15 12:35	EPA 8082A	
Aroclor 1221	ND	1.73	3.45		"	"	"	"	
Aroclor 1232	ND	1.73	3.45		"	"	"	"	
Aroclor 1242	ND	1.73	3.45		"	"	"	"	
Aroclor 1248	ND	1.73	3.45		"	"	"	"	
Aroclor 1254	ND	1.73	3.45		"	"	"	"	
Aroclor 1260	ND	1.73	3.45		"	"	"	"	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 72-126 %</i>		"	"	"	

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 Project Manager: Chris Breemer

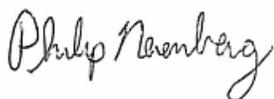
Reported:
 03/31/15 17:21

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil Stockpile (A5C0534-01)			Matrix: Soil					
Batch: 5030530								
Arsenic	1.85	0.616	1.23	mg/kg dry	10	03/19/15 15:07	EPA 6020A	
Barium	281	0.616	1.23	"	"	"	"	
Cadmium	0.419	0.123	0.246	"	"	"	"	
Chromium	11.8	0.616	1.23	"	"	"	"	
Lead	8.71	0.123	0.246	"	"	"	"	
Mercury	ND	0.0493	0.0986	"	"	"	"	
Selenium	ND	0.616	1.23	"	"	"	"	
Silver	ND	0.123	0.246	"	"	"	"	

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 Project Number: Area 2 Riverbank Interim SC
 Project Manager: Chris Breemer

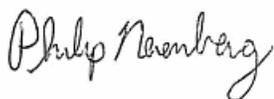
Reported:
 03/31/15 17:21

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil Stockpile (A5C0534-01)			Matrix: Soil		Batch: 5030556			
% Solids	81.0	1.00	1.00	% by Weight	1	03/20/15 10:01	EPA 8000C	

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Project: **Gunderson**
 Project Number: Area 2 Riverbank Interim SC
 Project Manager: Chris Breemer

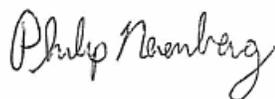
Reported:
 03/31/15 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5030553 - EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)						Soil						
Blank (5030553-BLK1)						Prepared: 03/19/15 14:11 Analyzed: 03/19/15 22:29						
NWTPH-Dx/SG												
Diesel	ND	8.93	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	17.9	50.0	"	"	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 78 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (5030553-BS1)						Prepared: 03/19/15 14:11 Analyzed: 03/19/15 22:54						
NWTPH-Dx/SG												
Diesel	99.4	12.5	25.0	mg/kg wet	1	125	---	80	76-115%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 75 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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 Portland, OR 97201

Project: **Gunderson**
 Project Number: Area 2 Riverbank Interim SC
 Project Manager: Chris Breemer

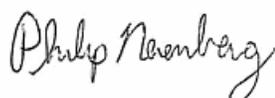
Reported:
 03/31/15 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5030499 - EPA 5035A						Soil						
Blank (5030499-BLK1)						Prepared: 03/18/15 12:00 Analyzed: 03/18/15 18:19						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>102 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (5030499-BS2)						Prepared: 03/18/15 12:00 Analyzed: 03/18/15 17:54						
NWTPH-Gx (MS)												
Gasoline Range Organics	26.7	2.50	5.00	mg/kg wet	50	25.0	---	107	70-130%	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>"</i>						

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 Portland, OR 97201

Project: **Gunderson**
 Project Number: Area 2 Riverbank Interim SC
 Project Manager: Chris Breemer

Reported:
 03/31/15 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5030534 - EPA 3546						Soil						
Blank (5030534-BLK1)						Prepared: 03/19/15 09:57 Analyzed: 03/20/15 11:59						C-07
EPA 8082A												
Aroclor 1016	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	1.33	2.67	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	1.33	2.67	"	"	---	---	---	---	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 72-111 %</i>		<i>Dilution: 1x</i>						
LCS (5030534-BS1)						Prepared: 03/19/15 09:57 Analyzed: 03/20/15 12:17						C-07
EPA 8082A												
Aroclor 1016	190	2.00	4.00	ug/kg wet	1	250	---	76	47-134%	---	---	
Aroclor 1260	217	2.00	4.00	"	"	"	---	87	53-140%	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 72-111 %</i>		<i>Dilution: 1x</i>						
Duplicate (5030534-DUP1)						Prepared: 03/19/15 09:57 Analyzed: 03/20/15 12:52						C-07
QC Source Sample: Soil Stockpile (A5C0534-01)												
EPA 8082A												
Aroclor 1016	ND	1.68	3.36	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	1.68	3.36	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	1.68	3.36	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	1.68	3.36	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	1.68	3.36	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	1.68	3.36	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	1.68	3.36	"	"	---	ND	---	---	---	30%	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 72-111 %</i>		<i>Dilution: 1x</i>						
Matrix Spike (5030534-MS1)						Prepared: 03/19/15 09:57 Analyzed: 03/20/15 13:10						C-07
QC Source Sample: Soil Stockpile (A5C0534-01)												
EPA 8082A												
Aroclor 1016	161	1.70	3.41	ug/kg dry	1	213	ND	75	47-134%	---	---	
Aroclor 1260	184	1.70	3.41	"	"	"	ND	86	53-140%	---	---	

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Philip Nerenberg, Lab Director

Apex Companies, LLC 3015 SW First Avenue Portland, OR 97201	Project: Gunderson Project Number: Area 2 Riverbank Interim SC Project Manager: Chris Breemer	Reported: 03/31/15 17:21
--	--	------------------------------------

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5030534 - EPA 3546						Soil						
Matrix Spike (5030534-MS1)						Prepared: 03/19/15 09:57 Analyzed: 03/20/15 13:10						C-07
QC Source Sample: Soil Stockpile (A5C0534-01)												
<i>Surr: Decachlorobiphenyl (Surr)</i>			<i>Recovery: 101 %</i>			<i>Limits: 72-111 %</i>			<i>Dilution: 1x</i>			



Apex Companies, LLC
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 Portland, OR 97201

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 Project Manager: Chris Breemer

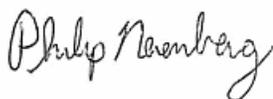
Reported:
 03/31/15 17:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5030530 - EPA 3051A						Soil						
Blank (5030530-BLK1)						Prepared: 03/19/15 09:04 Analyzed: 03/19/15 14:23						
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	---
Barium	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	---
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	---
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	---
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	---
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	---
LCS (5030530-BS1)						Prepared: 03/19/15 09:04 Analyzed: 03/19/15 14:26						
EPA 6020A												
Arsenic	47.2	0.500	1.00	mg/kg wet	10	50.0	---	94	80-120%	---	---	---
Barium	49.2	0.500	1.00	"	"	"	---	98	"	---	---	---
Cadmium	49.0	0.100	0.200	"	"	"	---	98	"	---	---	---
Chromium	49.7	0.500	1.00	"	"	"	---	99	"	---	---	---
Lead	51.1	0.100	0.200	"	"	"	---	102	"	---	---	---
Mercury	0.985	0.0400	0.0800	"	"	1.00	---	99	"	---	---	---
Selenium	25.8	0.500	1.00	"	"	25.0	---	103	"	---	---	---
Silver	25.0	0.100	0.200	"	"	"	---	100	"	---	---	---

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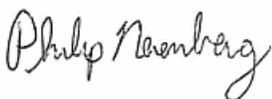
QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5030556 - Total Solids (Dry Weight)							Soil					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Project: **Gunderson**
 Project Number: Area 2 Riverbank Interim SC
 Project Manager: Chris Breemer

Reported:
 03/31/15 17:21

SAMPLE PREPARATION INFORMATION

Diesel and Oil Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup

Prep: EPA 3546 (Fuels) w/Silica Gel+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5030553							
A5C0534-01	Soil	NWTPH-Dx/SG	03/16/15 12:00	03/19/15 14:11	11.49g/5mL	10g/5mL	0.87

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5030499							
A5C0534-01	Soil	NWTPH-Gx (MS)	03/16/15 12:00	03/18/15 19:22	12.714g/10mL	10g/10mL	0.79

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5030534							
A5C0534-01	Soil	EPA 8082A	03/16/15 12:00	03/19/15 09:57	14.3g/2mL	10g/2mL	0.70

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5030530							
A5C0534-01	Soil	EPA 6020A	03/16/15 12:00	03/19/15 09:04	0.501g/50mL	0.5g/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5030556							
A5C0534-01	Soil	EPA 8000C	03/16/15 12:00	03/19/15 15:20	1N/A/1N/A	1N/A/1N/A	NA

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Project: **Gunderson**

Project Number: Area 2 Riverbank Interim SC
Project Manager: Chris Breemer

Reported:

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Notes and Definitions

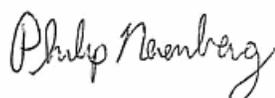
Qualifiers:

- C-07 Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- V-16 Sample aliquot was subsampled from the sample container in the laboratory. The subsampled aliquot was not preserved within 48 hours of sampling.

Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- *** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Project: **Gunderson**
Project Number: Area 2 Riverbank Interim SC
Project Manager: Chris Breemer

Reported:
03/31/15 17:21

A5C0534

CHAIN OF CUSTODY RECORD

Client Name: Apex Companies
Address: 3015 SW First Ave
City/State/Zip: Portland, OR 97201

Project Manager: Chris Breemer

Project Name: Gunderson Area 2 Riverbank Interim SCIMs

Project Number: 320001935-02.036

Sampler Name: Chris Breckett

Analytical Lab: Apex Labs
Report To: chreemer@apexcos.com
Page: 1 of 1

Apex Labs
3015 SW First Avenue
Portland, Oregon 97201-4704
(503) 943-6357 Phone
(503) 943-0337 Fax

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Ia	H2O (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H ₂ SO ₄ Phos (Yellow Label)	H ₂ SO ₄ Grav (Yellow Label)	None (Black Label)	Matrix							Other (specify):	PCBs via EPA Method 8082	Diesel and all NMTPH-Dx (w/ site)	Gasoline-range hydrocarbons M	Metals (EPA 6020) See note	Analyze For:		Standard TAT	Fax Results	Send QC with report										
														Preservative	Other (specify: Method)	Groundwater	Drinking Water	Soil	Sudge	Soil						Soil	Other (specify)													
Soil Stockpile	3/16/15	1200	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Special Instructions: 2-DAY TAT

Metals include: Ar, Ba, Cd, Cr, Pb, Hg, Se, and Ag

Retiquished by: Name/Company	Date		Time		Date		Time		
	Date	Time	Date	Time	Date	Time	Date	Time	
	Chris Breckett Apex	3/18/15	10:30	Chris Breckett Apex	3/18/15	17:20			

Method of Shipment:

Received by: Name/Company	Date	Time
Chris Breckett Apex	3/18/15	17:20

Laboratory Comments:

Appendix D

Supplemental SCE Report Soil Analytical Data

Table 1
 Soil Results from Expanded Preliminary Assessment
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	A2GS-1			A2GS-2			A2GS-4			A2GS-5			A2GS-6			A2GS-6- GRIT			A2GS-7			JSCS Screening Levels
				Sample Date			6/9/2003			6/9/2003			4/7/2004			4/7/2004			4/7/2004			4/7/2004			
				Depth (Feet Below Ground Surface)			0 - 0.25			0 - 0.25			0 - 0.25			0 - 0.25			0 - 0.25			0 - 0.25			
Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Inorganics	Mercury	mg/kg	EPA 7471A	--			--			0.0800		1.1	ND			ND			ND			0.1340		1.9	0.07
	Arsenic	mg/kg	EPA 6020	--			--			61.9		8.8	19.6		2.8	7.2			61.3		8.8	56.5		8.1	7
	Antimony	mg/kg	EPA 6020	--			--			9.9			3.7			ND			6.4			8.3			--
	Barium	mg/kg	EPA 6020	--			--			286			146			188			591			223			--
	Beryllium	mg/kg	EPA 6020	--			--			0.451			ND			0.773			0.545			0.555			--
	Cadmium	mg/kg	EPA 6020	--			--			ND			ND			ND			ND			ND			--
	Chromium	mg/kg	EPA 6020	--			--			166		1.5	22.6			20.9			62.2			37.9			111
	Copper	mg/kg	EPA 6020	--			--			586		3.9	542		3.6	25.4			5,260.0		35.3	655		4.4	149
	Lead	mg/kg	EPA 6020	--			--			164		9.6	48.5		2.9	50.2			88.7		5.2	213		12.5	17
	Manganese	mg/kg	EPA 6020	--			--			4,160		3.8	678			455			4,020		3.7	1,180		1.1	1,100
	Nickel	mg/kg	EPA 6020	--			--			36			22.9			17.4			50.8		1.0	42.3			48.6
	Selenium	mg/kg	EPA 6020	--			--			0.665			0.387			ND			1			0.592			2.0
	Silver	mg/kg	EPA 6020	--			--			0.547			ND			ND			2			0.927			5
	Zinc	mg/kg	EPA 6020	--			--			1,030		2.2	580		1.3	134			4,230		9.2	327			459
PCBs	Aroclor 1248	ug/kg	EPA 8082	ND			ND			--	--		--					--			--				1,500
	Aroclor 1254	ug/kg	EPA 8082	ND			252			--	--		--					--			--				300
	Aroclor 1260	ug/kg	EPA 8082	ND			344		1.7	--	--		--					--			--				200
	Other Aroclors	ug/kg	EPA 8082	ND			ND			--	--		--					--			--				
	Total PCBs	ug/kg	EPA 8082	ND			596		1,528	--	--		--					--			--				0.39
VOCs	1,1,1-Trichloroethane	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	1,1-Dichloroethane	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	1,1-Dichloroethene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	1,2,4-Trimethylbenzene	ug/kg	EPA 8260B	ND		1,230	222			142			ND					7,890			ND				--
	1,3,5-Trimethylbenzene	ug/kg	EPA 8260B	ND		802	110			ND			ND					3,690			ND				--
	1,4-Dichlorobenzene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				300
	2-Butanone	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	4-Methyl-2-pentanone	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	Acetone	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	Benzene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	Chlorobenzene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	Chloroethane	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	Chloroform	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	Ethylbenzene	ug/kg	EPA 8260B	ND			ND			ND			ND					490			ND				--
	Isopropylbenzene	ug/kg	EPA 8260B	ND			ND			ND			ND					403			ND				--
	Methylene chloride	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	n-Propylbenzene	ug/kg	EPA 8260B	ND			ND			ND			ND					496			ND				--
	p-Isopropyltoluene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
	sec-Butylbenzene	ug/kg	EPA 8260B	ND			ND			ND			ND					309			ND				--
	Tetrachloroethene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				500
	Toluene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--
Trichloroethene	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				2100	
Total xylenes	ug/kg	EPA 8260B	ND			156			132			ND					8,990			ND				--	
Other VOCs	ug/kg	EPA 8260B	ND			ND			ND			ND					ND			ND				--	

Please refer to notes at the end of table.

Table 1
 Soil Results from Expanded Preliminary Assessment
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	A2GS-1			A2GS-2			A2GS-4			A2GS-5			A2GS-6			A2GS-6- GRIT			A2GS-7			JSCS Screening Levels
				Sample Date			6/9/2003			6/9/2003			4/7/2004			4/7/2004			4/7/2004			4/7/2004			
				Depth (Feet Below Ground Surface)			0 - 0.25			0 - 0.25			0 - 0.25			0 - 0.25			0 - 0.25			0 - 0.25			
Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
PAHs	2-Methylnaphthalene	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			200
	Acenaphthene	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			300
	Acenaphthylene	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			200
	Anthracene	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			845
	Benzo(a)anthracene	ug/kg	EPA 8270M	1,210		1.2	477			--			--			--			--			--			1050
	Benzo(a)pyrene	ug/kg	EPA 8270M	1,830		1.3	681			--			--			--			--			--			1450
	Benzo(b)fluoranthene	ug/kg	EPA 8270M	3,840			945			--			--			--			--			--			--
	Benzo(ghi)perylene	ug/kg	EPA 8270M	2,050		6.8	769		2.6	--			--			--			--			--			300
	Benzo(k)fluoranthene	ug/kg	EPA 8270M	1,700			801			--			--			--			--			--			13000
	Chrysene	ug/kg	EPA 8270M	2,400		1.9	764			--			--			--			--			--			1290
	Dibenzo(a,h)anthracene	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			1300
	Fluoranthene	ug/kg	EPA 8270M	1,420			1,090			--			--			--			--			--			2230
	Fluorene	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			536
	Indeno(1,2,3-cd)pyrene	ug/kg	EPA 8270M	1,220		12.2	628		6.3	--			--			--			--			--			100
	Naphthalene	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			561
Phenanthrene	ug/kg	EPA 8270M	ND			564			--			--			--			--			--			1170	
Pyrene	ug/kg	EPA 8270M	1,740		1.1	964			--			--			--			--			--			1520	
Phthalates and other SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			330
	Butyl benzyl phthalate	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			--
	Diethyl phthalate	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			600
	Other phthalates	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			--
	Other SVOCs	ug/kg	EPA 8270M	ND			ND			--			--			--			--			--			--
Organotins	Dibutyltin	ug/kg	PSEP	165			184			7.8			32.7			1.7			ND			11.6			--
	Monobutyltin	ug/kg	PSEP	36.3			45.5			ND			13.1			4.9			ND			16.4			--
	Tetra-n-butyltin	ug/kg	PSEP	ND			7.14			ND			ND			ND			ND			ND			--
	Tributyltin	ug/kg	PSEP	189		82.2	1,770		770	7.4		3.2	39.6			3.3			ND			146		63.5	2.3
	Total butyltins	ug/kg	PSEP	390			2,005			15			85			8			ND			179			--
Petroleum Hydrocarbons	Gasoline	mg/kg	NWTPH-Gx	--			--			ND			ND			ND			26			ND			--
	Diesel	mg/kg	NWTPH-Dx	17,400			221			88			ND			ND			ND			25.6			--
	Heavy Oil	mg/kg	NWTPH-Dx	ND			ND			292			ND			ND			3,370			ND			--

- Notes:**
- = Not Applicable/ Not Analyzed
 - mg/kg = milligrams per kilogram
 - ug/kg = micrograms per kilogram
 - ND = the constituent was not detected. See Squier-Kleinfelder (2004c) for reporting limits and other analytical details.
 - JSCS Screening level= Portland Harbor Joint Source Control Strategy: Table 3-1, revision date 7/16/07

Table 2
 Willamette River Shallow Sediment Data
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Location Name			G456			G457			GCRSP08W			PP011801			PP011802			PP011803			PP011805			PP011806			PP011807			PP011808			PP011809			PP011810			SD142			SD143			
	Depth	Sample Date	Units	PRGs	0-24			0-27			0-19			0-15			0-15			0-15			0-15			0-15			0-15			0-15			0-15			0-10			0-10					
					Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance									
	Analyte	8/31/2004	8/31/2004	8/15/2007	8/20/2002	8/20/2002	8/20/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002					
Inorganics	Arsenic	mg/kg	17	22.9	U		6.9			3.3				5.7	J		5.93	T		5.42	J		9.76			7.41			5.55			5.66			4.36			6			5					
	Cadmium	mg/kg	90	0.34	U		0.29			0.332				0.46	J		0.626	J		0.626	J		0.897			0.664			0.713			0.759			0.077			0.5			0.5					
	Chromium	mg/kg	149	359		2.4	35.4			21.1	J			34.2	J		39.1	T		44.7	J		46			23.7			32.6			32.5			37.9			37.9			34.1					
	Copper	mg/kg	149	359		2.4	35.4			21.1	J			34.2	J		39.1	T		44.7	J		46			23.7			32.6			32.5			37.9			37.9			34.1					
	Lead	mg/kg	91.3	66.1			26			41				90.2	J		154	J		179	J		210	J		97.6	J		148	J		168	J		1.8			67.3	J		17	J		28		
	Mercury	mg/kg	0.41	0.067			0.085			0.122				0.189	J		0.187	J		0.204	J		0.318	J		0.245	J		0.334	J		0.453	J		1.1			0.128	J		0.06			0.04		
	Nickel	mg/kg	36	31.3			30			16.1	J			19.8	J		20.5	J		20	J		18.8	J		18.1	J		18.5	J		16.8	J		23.9	J		29	J		23.2					
	Selenium	mg/kg	--	0.19			0.18			0.05	J			0.508	J		0.417	UT		0.533	J		0.614	J		0.459	J		0.457	J		0.421	J		0.658	J		14			10			10		
	Silver	mg/kg	1.72	0.342			0.207			0.142	J			0.149	J		0.183	J		0.205	J		0.349	J		0.165	J		0.174	J		0.327	J		0.387	J		0.8			0.6			0.6		
	Zinc	mg/kg	315	457		1.5	219			162				203	J		265	J		256	J		256	J		245	J		257	J		272	J		119	J		113	J		109			109		
PCBs	Aroclor 1016	ug/kg	--	10.4	UJ		3.85	UJ		1.6	U		5.98	U		6.04	UT		6.89	U		6.82	U		5.99	U		6.3	U		5.94	U		8.46	U		--			--			--			
	Aroclor 1221	ug/kg	--	19.2	UJ		7.14	UJ		1.6	U		2.28	U		2.3	UT		2.62	U		2.6	U		2.28	U		2.4	U		2.26	U		3.22	U		--			--			--			
	Aroclor 1232	ug/kg	--	17.4	UJ		6.45	UJ		1.6	U		3.87	U		3.9	UT		4.46	U		4.41	U		3.87	U		4.08	U		3.84	U		5.47	U		--			--			--			
	Aroclor 1242	ug/kg	--	10.6	UJ		3.92	UJ		82			2.85	U		2.88	UT		3.28	U		3.25	U		2.85	U		3	U		2.83	U		4.03	U		--			--			--			
	Aroclor 1248	ug/kg	--	86.8	J		56.8	J		1.6	U		158	J		139	T		154	J		154	J		154	J		223	J		106	J		54.5	J		--			--			--			
	Aroclor 1254	ug/kg	--	68.7	J		57.8	J		47	J		115	J		61.1	T		83.2	J		159	J		113	J		81.8	J		38.4	J		24.5	J		--			--			--			
	Aroclor 1260	ug/kg	--	33.3	J		26.9	J		34	J		3.21	J		36.9	T		3.69	U		74	J		49.5	J		52.1	J		19.5	J		14.3	J		--			--			--			
	Aroclor 1262	ug/kg	--	9.7	UJ		3.6	UJ		1.6	U		3.16	U		3.19	UT		3.64	U		3.6	U		3.16	U		3.32	U		3.14	U		4.46	U		--			--			--			
	Aroclor 1268	ug/kg	--	8.33	UJ		3.09	UJ		1.6	U		3.16	U		3.19	UT		3.64	U		3.6	U		3.16	U		3.32	U		3.14	U		4.46	U		--			--			--			
	Total Aroclors	ug/kg	29.5	189	JT	6.4	142	JT		163	JT	5.5	73.0	T		273	T	9.3	237	T	8.0	237	T	8.0	640	T	21.7	479	T	16.2	357	T	12.1	164	T	5.6	93.3	T	3.2							
Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	--	--		--	--		1.33	J		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--			
	2,3,7,8-Tetrachlorodibenzofuran	pg/g	54.1	--		--	--		0.66	J		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--			
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	--	--		--	--		0.476	J		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--			
Butyltins	Butyltin ion	ug/kg	2.7	13	J	4.8	6.9	J	2.6	U		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--			
	Dibutyltin ion	ug/kg	13	21	U	1.6	14	U	7.2	U		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--			
	Tetrabutyltin	ug/kg	0.2	0.2	U		0.25	U	0.11	U		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--			
	Tributyltin	ug/kg	3.78	30		7.9	25	--	25		6.6		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		--	--		
PAHs	2-Methylnaphthalene	ug/kg	59	10		14	--	BaPEq=289.4	14	--	BaPEq=133.7	33.3	--	BaPEq=10.3	13.1	JT	124	--	BaPEq=598.0	147	--	BaPEq=334.6	210	--	BaPEq=9.0	12.4	J	BaPEq=28.4	26.7	--	BaPEq=15.5	35.3	U	BaPEq=13.3	19	U	BaPEq=63.2	37	U			BaPEq=68.8				
	Acenaphthene	ug/kg	130	10		29		9.4		23.8		--	--	16.4	JT	65.8		189		189		45		13.5	J	13.5	J	24.5		11.2	U	35	U	19	U			19	U			19	U			
	Acenaphthylene	ug/kg	10	50		8	--	8.7		23.3		--	--	9.79	JT	51.2		6.85	U	6.85		16		14.3	J	14.3	J	16.5		9.87	U	19	U			19	U			19	U					
	Anthracene	ug/kg	180	50		21		30.1		30.1		--	--	21.2	JT	93.4		170		170		37.1		40.1	J	40.1	J	17.5		5.71	U	58	U			58	U			58	U					
	Benzo(a)anthracene	ug/kg	390	210		86		86		10.8	U		--	--	83.3	T	265		265		265		9.32		10.1	U	10.1	U	40.1		13.8	U	33	U			33	U			33	U				
	Benzo(a)pyrene	ug/kg	410	190		88		10.3	U	10.3	U		--	--	144	T	499		254		254		8.97		9.89	U	9.89	U	9.37	U	13.3	U			13.3	U			13.3	U						
	Benzo(b)fluoranthene	ug/kg	520	300		140		--		--			--	--	--		--		--		--		--		--	--		--		--			--		--		--			--						
	Benzo(b+k)fluoranthene	ug/kg	0	0		--		7.75	U	7.75	U		--	--	141	T	603		397		397		6.72	U	116	U	116	U	7.02	U	9.96	U	111	T	101	T			101	T						

Table 3
 Vector 2.1 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.1																												JSCS Screening Levels
				090210-2-2.1- Surface-11-FS			090210-2-2.1- 1.5-01-FS			090210-2-2.1- 5-02-FS			090210-2-2.1- 20-05-FS			090210-2-2.1- 20-06-DUP			090210-2-2.1- 25-07-FS			090210-2-2.1- 30-08-FS			090210-2-2.1- 35-09-FS			090210-2-2.1- 40-10-FS				
				Sample Date			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010				
				Depth (Feet Below Ground Surface)			0			0 - 1.5			5 - 10			20 - 25			20 - 25			25 - 30			30 - 35			35 - 40			40 - 45	
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance			
Inorganics	Mercury	mg/kg	EPA 7471A	0.0834	J	1.2	0.0122	J		0.0641	J		0.0243	J		0.0208	J		0.0616	J		0.0186	J		0.0258	J		0.0274	J		0.07	
	Arsenic	mg/kg	EPA 6020	19.2		2.7	17.3		2.5	26.1		3.7	12.4		1.8	11.3		1.6	16.0		2.3	12.3		1.8	3.60		6.99	7		7		
	Barium	mg/kg	EPA 6020	530			183			182			287			260			310			174			97.2		184	--		--		
	Chromium	mg/kg	EPA 6020	263		2.4	35.0	J		32.9			36.8			32.1			37.5			79.0			21.8		23.6			111		
	Copper	mg/kg	EPA 6020	902		6.1	301		2.0	250		1.7	34.2			31.5			39.3			76.9			24.4		32.4			149		
	Lead	mg/kg	EPA 6020	293		17.2	63.3	J	3.7	87.1		5.1	22.1		1.3	25.2		1.5	26.6		1.6	26.1		1.5	26.9		13.7			17		
	Manganese	mg/kg	EPA 6020	6,550		6.0	1,240		1.1	1,270		1.2	859			602			824			1,870		1.7	380		491			1,100		
	Nickel	mg/kg	EPA 6020	245		5.0	26.4	J		22.5			25.4			23.7			29.2			59.0		1.2	35.7		25.5			48.6		
	Selenium	mg/kg	EPA 6020	0.124	J		0.520	J		0.222	J		0.222	J		0.134	J		0.228	J		0.0311	J		0.0461	J		0.0451	J		2.0	
	Silver	mg/kg	EPA 6020	7.55		1.5	0.329	J		0.333	J		0.140	J		0.165	J		0.167	J		0.118	J		0.0807	J		0.173	J		5	
	Zinc	mg/kg	EPA 6020	3,130		6.8	345			385			109			114			122			105			86.0		123			459		
PCBs	Aroclor 1016	µg/kg	EPA 8082	2.06	U		1.83	U		1.89	U		2.23	U		2.12	U		2.53	U		8.36	U		1.99	U		2.56	U		530	
	Aroclor 1221	µg/kg	EPA 8082	4.10	U		3.66	U		3.77	U		4.44	U		4.22	U		5.05	U		16.7	U		3.98	U		5.11	U		--	
	Aroclor 1232	µg/kg	EPA 8082	2.06	U		1.83	U		1.89	U		2.23	U		2.12	U		2.53	U		8.36	U		1.99	U		2.56	U		--	
	Aroclor 1242	µg/kg	EPA 8082	2.06	U		1.83	U		1.89	U		2.23	U		2.12	U		2.53	U		8.36	U		1.99	U		2.56	U		--	
	Aroclor 1248	µg/kg	EPA 8082	2.06	U		1.83	U		41.5	J		2.23	U		2.12	U		2.53	U		8.36	U		1.99	U		2.56	U		1,500	
	Aroclor 1254	µg/kg	EPA 8082	40.2			1.83	U		1.89	U		2.23	U		2.12	U		2.53	U		41.6			2.94	J		2.56	U		300	
	Aroclor 1260	µg/kg	EPA 8082	2.06	U		1.83	U		1.89	U		2.23	U		2.12	U		2.53	U		8.36	U		1.99	U		2.56	U		200	
	Aroclor 1262	µg/kg	EPA 8082	2.06	U		1.83	U		1.89	U		2.23	U		2.12	U		2.53	U		8.36	U		1.99	U		2.56	U		--	
	Aroclor 1268	µg/kg	EPA 8082	2.06	U		1.83	U		1.89	U		2.23	U		2.12	U		2.53	U		8.36	U		1.99	U		2.56	U		--	
Total PCBs	µg/kg	EPA 8082	40.2		103.1	18.3	U		41.5	J		106.4	22.28	U		21.18	U		25.29	U		41.6		106.7	20.85	U		25.59	U		0.39	
VOCs	1,1,1,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			11.0	UJ		14.0	UJ		--	
	1,1,1-Trichloroethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			5.93	UJ		7.55	UJ		--	
	1,1,2,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			13.4	UJ		17.1	UJ		--	
	1,1,2-Trichloroethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.99	UJ		10.2	UJ		--	
	1,1-Dichloroethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.91	UJ		10.1	UJ		--	
	1,1-Dichloroethene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			14.1	UJ		18.0	UJ		--	
	1,1-Dichloropropene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			9.31	UJ		11.8	UJ		--	
	1,2,3-Trichlorobenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			11.0	UJ		14.0	UJ		--	
	1,2,3-Trichloropropane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.62	UJ		9.69	UJ		--	
	1,2,4-Trichlorobenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			16.4	UJ		20.8	UJ		9,200	
	1,2,4-Trimethylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			17.4	UJ		22.2	UJ		--	
	1,2-Dibromo-3-chloropropane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			48.6	UJ		61.8	UJ		--	
	1,2-Dibromoethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			12.2	UJ		15.6	UJ		--	
	1,2-Dichlorobenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			9.17	UJ		11.7	UJ		1,700	
	1,2-Dichloroethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.92	UJ		11.3	UJ		--	
	1,2-Dichloropropane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.91	UJ		10.1	UJ		--	
	1,3,5-Trimethylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			9.65	UJ		12.3	UJ		--	
	1,3-Dichlorobenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.36	UJ		9.36	UJ		300	
	1,3-Dichloropropane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.83	UJ		9.96	UJ		--	
	1,4-Dichlorobenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			9.96	UJ		12.7	UJ		300	
	2,2-Dichloropropane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.41	UJ		9.42	UJ		--	
	2-Butanone	µg/kg	EPA 8260B	--			--			--			--			--			--			--			29.9	UJ		38.0	UJ		--	
	2-Chlorotoluene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			6.99	UJ		8.89	UJ		--	
	2-Hexanone	µg/kg	EPA 8260B	--			--			--			--			--			--			--			33.3	UJ		42.4	UJ		--	
	4-Chlorotoluene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			5.11	UJ		6.50	UJ		--	
	4-Methyl-2-pentanone	µg/kg	EPA 8260B	--			--			--			--			--			--			--			22.5	UJ		28.6	UJ		--	
	Acetone	µg/kg	EPA 8260B	--			--			--			--			--			--			--			708	UJ		900	UJ		--	
	Benzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			4.98	UJ		6.33	UJ		--	
Bromobenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			14.7	UJ		18.7	UJ		--		
Bromochloromethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			11.5	UJ		14.6	UJ		--		
Bromodichloromethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			12.0	UJ		15.3	UJ		--		
Bromoform	µg/kg	EPA 8260B	--			--			--			--			--			--			--			10.8	UJ		13.8	UJ		--		
Bromomethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			9.48	UJ		12.1	UJ		--		

Please refer to notes at end of table.

Table 3
 Vector 2.1 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.1																								JSCS Screening Levels						
				090210-2-2.1- Surface-11-FS			090210-2-2.1- 1.5-01-FS			090210-2-2.1- 5-02-FS			090210-2-2.1- 20-05-FS			090210-2-2.1- 20-06-DUP			090210-2-2.1- 25-07-FS			090210-2-2.1- 30-08-FS			090210-2-2.1- 35-09-FS				090210-2-2.1- 40-10-FS					
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		Result	Flag	Exceedance			
				Sample Date			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010						
				Depth (Feet Below Ground Surface)			0			0 - 1.5			5 - 10			20 - 25			20 - 25			25 - 30			30 - 35			35 - 40			40 - 45			
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	
VOCs (continued)	Carbon disulfide	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.47	UJ		10.8	UJ		--			
	Carbon tetrachloride	µg/kg	EPA 8260B	--			--			--			--			--			--			--			13.0	UJ		16.5	UJ		--			
	Chlorobenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			3.61	UJ		4.60	UJ		--			
	Chloroethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			21.8	UJ		27.7	UJ		--			
	Chloroform	µg/kg	EPA 8260B	--			--			--			--			--			--			--			6.40	UJ		8.14	UJ		--			
	Chloromethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.23	UJ		10.5	UJ		--			
	cis-1,2-Dichloroethene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			12.7	UJ		16.2	UJ		--			
	cis-1,3-Dichloropropene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			5.42	UJ		6.89	UJ		--			
	Dibromochloromethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.74	UJ		11.1	UJ		--			
	Dibromomethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			5.59	UJ		7.11	UJ		--			
	Dichlorodifluoromethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.47	UJ		10.8	UJ		--			
	Ethylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			3.33	UJ		4.24	UJ		--			
	Hexachlorobutadiene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			10.5	UJ		13.3	UJ		--			
	Isopropylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.74	UJ		11.1	UJ		--			
	m,p-Xylene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			21.0	UJ		26.6	UJ		--			
	Methyl tert-butyl ether	µg/kg	EPA 8260B	--			--			--			--			--			--			--			6.40	UJ		8.14	UJ		--			
	Methylene chloride	µg/kg	EPA 8260B	--			--			--			--			--			--			--			33.0	J		37.4	J		--			
	Naphthalene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			9.07	UJ		11.5	UJ		--			
	n-Butylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.53	UJ		9.58	UJ		--			
	n-Propylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.28	UJ		10.5	UJ		--			
	o-Xylene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			7.62	UJ		9.69	UJ		--			
	p-Isopropyltoluene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			11.4	UJ		14.5	UJ		--			
	sec-Butylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			5.99	UJ		7.62	UJ		--			
	Styrene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			3.70	UJ		4.70	UJ		--			
tert-Butylbenzene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			11.5	UJ		14.6	UJ		--				
Tetrachloroethene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			17.0	UJ		21.6	UJ		500				
Toluene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			4.12	UJ		5.24	UJ		--				
trans-1,2-Dichloroethene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			6.90	UJ		8.77	UJ		--				
trans-1,3-Dichloropropene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			6.90	UJ		8.77	UJ		--				
Trichloroethene	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.55	UJ		10.9	UJ		2100				
Trichlorofluoromethane	µg/kg	EPA 8260B	--			--			--			--			--			--			--			36.6	UJ		46.6	UJ		--				
Vinyl chloride	µg/kg	EPA 8260B	--			--			--			--			--			--			--			8.81	UJ		11.2	UJ		--				
SVOCs	1,2,4-Trichlorobenzene	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--			
	1,2-Dichlorobenzene	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		1,700			
	1,3-Dichlorobenzene	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		300			
	1,4-Dichlorobenzene	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		300			
	2,4,5-Trichlorophenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	2,4,6-Trichlorophenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	2,4-Dichlorophenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	2,4-Dimethylphenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--			
	2,4-Dinitrophenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			2,390	U		3,040	U		--			
	2,4-Dinitrotoluene	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--			
	2,6-Dinitrotoluene	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--			
	2-Chloronaphthalene	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	2-Chlorophenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	2-Methylphenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	2-Nitroaniline	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	2-Nitrophenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	3,3'-Dichlorobenzidine	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--			
	3,4-Methylphenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	3-Nitroaniline	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--			
	4,6-Dinitro-2-methylphenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--			
	4-Bromophenyl phenyl ether	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	4-Chloro-3-methylphenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--			
	4-Chloroaniline	µg/kg	EPA 8270C	--			--			--			--			--			--			--			197	U		251	U		--			
	4-Chlorophenyl phenyl ether	µg/kg	EPA 8270C	--			--			--			--			--			--			--			119	U		152	U		--			
4-Nitroaniline	µg/kg	EPA 8270C	--			--			--			--			--			--			--			83.6	U		106	U		--				
4-Nitrophenol	µg/kg	EPA 8270C	--			--			--			--			--			--			--			597	U		759	U		--				

Please refer to notes at end of table.

Table 3
 Vector 2.1 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.1																								JSCS Screening Levels			
				090210-2-2.1- Surface-11-FS			090210-2-2.1- 1.5-01-FS			090210-2-2.1- 5-02-FS			090210-2-2.1- 20-05-FS			090210-2-2.1- 20-06-DUP			090210-2-2.1- 25-07-FS			090210-2-2.1- 30-08-FS			090210-2-2.1- 35-09-FS				090210-2-2.1- 40-10-FS		
				Sample Date			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010			9/2/2010				9/2/2010		
				Depth (Feet Below Ground Surface)			0			0 - 1.5			5 - 10			20 - 25			20 - 25			25 - 30			30 - 35				35 - 40		
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
SVOCs (continued)	Benzoic Acid	µg/kg	EPA 8270C	--			--			--			--			--			--			597	U		759	U		--			
	Benzyl Alcohol	µg/kg	EPA 8270C	--			--			--			--			--			1,190	U		1,520	U		1,520	U		--			
	Bis(2-chloroethoxy)methane	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
	Bis(2-chloroethyl)ether	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
	Bis(2-chloroisopropyl)ether	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
	Dibenzofuran	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
	Hexachlorobenzene	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		19			
	Hexachlorobutadiene	µg/kg	EPA 8270C	--			--			--			--			--			597	U		759	U		759	U		600			
	Hexachlorocyclopentadiene	µg/kg	EPA 8270C	--			--			--			--			--			597	U		759	U		759	U		400			
	Hexachloroethane	µg/kg	EPA 8270C	--			--			--			--			--			597	U		759	U		759	U		--			
	Isophorone	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
	Nitrobenzene	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
	N-Nitrosodi-n-propylamine	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
	N-Nitrosodiphenylamine	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		--			
Pentachlorophenol	µg/kg	EPA 8270C	--			--			--			--			--			597	U		759	U		759	U		250				
Phenol	µg/kg	EPA 8270C	--			--			--			--			--			83.6	U		106	U		106	U		50				
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	20.4	U		3.60	U		18.6	U		4.36	U		4.18	U		4.95	U		4.13	U		3.94	U		5.00	U		200
	Acenaphthene	µg/kg	EPA 8270M	20.4	U		3.60	U		18.6	U		4.36	U		4.18	U		4.95	U		4.13	U		3.94	U		5.00	U		300
	Acenaphthylene	µg/kg	EPA 8270M	20.4	U		3.60	U		18.6	U		8.69	J		4.18	U		4.95	U		4.13	U		10.8	J		5.00	U		200
	Anthracene	µg/kg	EPA 8270M	28.4	J		3.60	U		18.6	U		15.6	J		4.18	U		4.95	U		4.13	U		12.8	J		5.00	U		845
	Benzo(a)anthracene	µg/kg	EPA 8270M	247			3.60	U		46.7	J		78.3	J		18.6	J		4.95	U		4.13	U		69.9			5.00	U		1050
	Benzo(a)pyrene	µg/kg	EPA 8270M	344			3.60	U		58.1	J		111	J		23.7	J		4.95	U		4.13	U		116			5.00	U		1450
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	419			3.60	U		79.8	J		84.3	J		19.4	J		4.95	U		4.13	U		90.2			5.00	U		--
	Benzo(ghi)perylene	µg/kg	EPA 8270M	332		1.1	3.60	U		57.9	J		89.2	J		18.2	J		4.95	U		4.13	U		111			5.00	U		300
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	343			3.60	U		36.8	J		75.2	J		14.4	J		4.95	U		4.13	U		79.1			5.00	U		13000
	Chrysene	µg/kg	EPA 8270M	459			3.60	U		71.1	J		130	J		28.8	J		4.95	U		4.13	U		105			5.00	U		1290
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	84.1			3.60	U		22.5	J		16.3	J		4.18	U		4.95	U		4.13	U		16.1			5.00	U		1300
	Fluoranthene	µg/kg	EPA 8270M	486			3.60	U		91.1	J		257	J		41.9	J		4.95	U		4.28	J		155			5.00	U		2230
	Fluorene	µg/kg	EPA 8270M	20.4	U		3.60	U		18.6	U		12.9	J		4.18	U		4.95	U		4.13	U		5.21	J		5.00	U		536
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	254		2.5	3.60	U		39.8	J		69.6	J		13.1	J		4.95	U		4.13	U		81.5			5.00	U		100
Naphthalene	µg/kg	EPA 8270M	20.4	U		3.60	U		18.6	U		4.36	U		4.18	U		4.95	U		4.13	U		4.05	J		5.00	U		561	
Phenanthrene	µg/kg	EPA 8270M	192			3.60	U		74.5	J		184	J		29.7	J		4.95	U		4.36	J		81.6			5.00	U		1170	
Pyrene	µg/kg	EPA 8270M	463			3.60	U		76.7	J		320	J		54.8	J		4.95	U		5.14	J		265			5.00	U		1520	
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	912		2.8	14.6	U		75.6	U		17.8	U		17.0	U		20.0	U		18.8	J		15.9	U		20.4	U		330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	182	J		14.6	U		75.6	U		17.8	U		17.0	U		20.0	U		16.7	U		15.9	U		20.4	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	166	U		14.6	U		75.6	U		17.8	U		17.0	U		20.0	U		16.7	U		15.9	U		20.4	U		600
	Dimethyl phthalate	µg/kg	EPA 8270M	166	U		14.6	U		75.6	U		17.8	U		17.0	U		20.0	U		16.7	U		15.9	U		20.4	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	256	J	4.3	14.6	U		75.6	U	1.3	17.8	U		17.0	U		20.2	J		16.7	U		15.9	U		20.4	U		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	166	U		14.6	U		75.6	U		17.8	U		17.0	U		20.0	U		16.7	U		15.9	U		20.4	U		--
Organotins	Dibutyltin	µg/kg	PSEP	55			1.4	U		1.5	U		1.7	U		1.7	U		1.7	U		1.6	U		1.5	U		1.8	U		--
	Monobutyltin	µg/kg	PSEP	38			1.4	U		1.5	U		1.7	U		1.7	U		1.3	U		1.6	U		1.5	U		1.8	U		--
	Tetra-n-butyltin	µg/kg	PSEP	4.4	U		3.8	U		4.0	U		4.7	U		4.6	U		4.5	U		4.4	U		4.1	U		5.0	U		--
	Tributyltin	µg/kg	PSEP	580		252.2	1.4	U		1.5	U		1.7	U		1.7	U		1.7	U		1.6	U		1.5	U		1.8	U		2.3
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	54.9			6.74	J		39.3			25.2			1.52	J		8.10	J		41.5			36.9			1.06	U		--
	Heavy Oil	mg/kg	NWTPH-Dx	543			49.5			259			127			5.33	J		31.4	J		93.1			138			1.59	J		--

- Notes:
- = Not applicable/not analyzed.
 - mg/kg = Milligrams per kilogram.
 - µg/kg = Micrograms per kilogram.
 - J = The result is an estimated quantity.
 - U = Undetected at the method detection limit shown.
 - UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
 - JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
 - SLV = Screening Level Value.
 - Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 4
 Vector 2.2 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.2																								JSCS Screening Levels
				090310-2-2.2- Surface-11-WS			090310-2-2.2- 1.5-01-FS			090310-2-2.2- 10-03-FS			090310-2-2.2- 20-05-FS			090310-2-2.2- 25-06-FS			090310-2-2.2- 25-07-Dup			090310-2-2.2- 30-08-FS			090310-2-2.2- 40-10-FS			
				Sample Date: 9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			
				Depth (Feet Below Ground Surface): 0			0 - 1.5			10 - 15			20 - 25			25 - 30			25 - 30			30 - 35			40 - 45			
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Inorganics	Mercury	mg/kg	EPA 7471A	0.0701	J	1.0	0.00420	U		0.0128	J		0.0733	J	1.0	0.0272	J		0.0368	J		0.0547	J		0.00720	U		0.07
	Arsenic	mg/kg	EPA 6020	23.0	J	3.3	17.1	U	2.4	4.29	J		7.42	J	1.1	5.10	J		4.32	J		20.2	J	2.9	20.2	J	2.9	7
	Barium	mg/kg	EPA 6020	151			45.3			120			141			148			133			216			207	J		--
	Chromium	mg/kg	EPA 6020	102.0			6.33			17.5			23.7			19.7			18.8			21.6			29.4	J		111
	Copper	mg/kg	EPA 6020	359		2.4	46.5		1.5	20.5			22.0			23.8			23.7			59.5			42.0	J		149
	Lead	mg/kg	EPA 6020	137		8.1	26.3			7.02			14.2			10.9			12.4			216		12.7	36.9	J	2.2	17
	Manganese	mg/kg	EPA 6020	2,600		2.4	396			515			647			568			451			591			1,200	J	1.1	1,100
	Nickel	mg/kg	EPA 6020	87.1		1.8	6.58			17.1			18.5			21.3			17.6			15.3			26.4	J		48.6
	Selenium	mg/kg	EPA 6020	0.107	J		0.063	J		0.0600	J		0.094	J		0.0939	J		0.0592	J		0.156	J		0.147	J		2.0
	Silver	mg/kg	EPA 6020	0.401	J		0.0893	J		0.0900	J		0.094	J		0.125	J		0.178	J		0.249	J		0.177	J		5
	Zinc	mg/kg	EPA 6020	524		1.1	137			62.2			70.9			65.3			79.7			288			105	J		459
PCBs	Aroclor 1016	µg/kg	EPA 8082	18.0	U		1.75	U		2.05	U		2.14	U		2.14	U		20.1	U		2.07	U		--			530
	Aroclor 1221	µg/kg	EPA 8082	35.9	U		3.48	U		4.09	U		4.27	U		4.27	U		40.0	U		4.14	U		--			--
	Aroclor 1232	µg/kg	EPA 8082	18.0	U		1.75	U		2.05	U		2.14	U		2.14	U		20.1	U		2.07	U		--			--
	Aroclor 1242	µg/kg	EPA 8082	18.0	U		1.75	U		2.05	U		2.14	U		2.14	U		349	J		2.07	U		--			--
	Aroclor 1248	µg/kg	EPA 8082	18.0	U		1.75	U		2.05	U		2.14	U		2.14	U		20.1	U		2.07	U		--			1,500
	Aroclor 1254	µg/kg	EPA 8082	18.0	U		1.75	U		2.05	U		2.44	J		2.14	U		20.1	U		2.07	U		--			300
	Aroclor 1260	µg/kg	EPA 8082	68.3	U		1.75	U		2.05	U		2.14	U		2.14	U		20.1	U		2.07	U		--			200
	Aroclor 1262	µg/kg	EPA 8082	18.0	U		1.75	U		2.05	U		2.14	U		2.14	U		20.1	U		2.07	U		--			--
	Aroclor 1268	µg/kg	EPA 8082	18.0	U		1.75	U		2.05	U		2.14	U		2.14	U		20.1	U		2.07	U		--			--
Total PCBs	µg/kg	EPA 8082	68.3		175.1	17.48	U	44.8	20.49	U	52.5	2.44	J	6.3	21.39	U	54.8	349	J	894.9	20.7	U	53.1	--			0.39	
VOCs	1,1,1,2-Tetrachloroethane	µg/kg	EPA 8260B	--			9.61	U		--			--		11.6	U		10.9	U		--			--			--	
	1,1,1-Trichloroethane	µg/kg	EPA 8260B	--			5.19	U		--			--		6.26	U		5.87	U		--			--			--	
	1,1,2,2-Tetrachloroethane	µg/kg	EPA 8260B	--			11.7	U		--			--		14.2	U		13.3	U		--			--			--	
	1,1,2-Trichloroethane	µg/kg	EPA 8260B	--			7.00	U		--			--		8.43	U		7.91	U		--			--			--	
	1,1-Dichloroethane	µg/kg	EPA 8260B	--			6.92	U		--			--		8.34	U		7.83	U		--			--			--	
	1,1-Dichloroethene	µg/kg	EPA 8260B	--			12.4	U		--			--		14.9	U		14.0	U		--			--			--	
	1,1-Dichloropropene	µg/kg	EPA 8260B	--			8.15	U		--			--		9.82	U		9.21	U		--			--			--	
	1,2,3-Trichlorobenzene	µg/kg	EPA 8260B	--			9.66	U		--			--		11.6	U		10.9	U		--			--			--	
	1,2,3-Trichloropropane	µg/kg	EPA 8260B	--			6.67	U		--			--		8.03	U		7.54	U		--			--			--	
	1,2,4-Trichlorobenzene	µg/kg	EPA 8260B	--			14.3	U		--			--		17.3	U		16.2	U		--			--			9,200	
	1,2,4-Trimethylbenzene	µg/kg	EPA 8260B	--			15.2	U		--			--		18.4	U		17.2	U		--			--			--	
	1,2-Dibromo-3-chloropropane	µg/kg	EPA 8260B	--			42.5	U		--			--		51.3	U		48.1	U		--			--			--	
	1,2-Dibromoethane	µg/kg	EPA 8260B	--			10.7	U		--			--		12.9	U		12.1	U		--			--			--	
	1,2-Dichlorobenzene	µg/kg	EPA 8260B	--			8.03	U		--			--		9.67	U		9.07	U		--			--			1,700	
	1,2-Dichloroethane	µg/kg	EPA 8260B	--			7.81	U		--			--		9.41	U		8.83	U		--			--			--	
	1,2-Dichloropropane	µg/kg	EPA 8260B	--			6.92	U		--			--		8.34	U		7.83	U		--			--			--	
	1,3,5-Trimethylbenzene	µg/kg	EPA 8260B	--			8.45	U		--			--		10.2	U		9.55	U		--			--			--	
	1,3-Dichlorobenzene	µg/kg	EPA 8260B	--			6.44	U		--			--		7.76	U		7.28	U		--			--			300	
1,3-Dichloropropane	µg/kg	EPA 8260B	--			6.85	U		--			--		8.26	U		7.75	U		--			--			--		
1,4-Dichlorobenzene	µg/kg	EPA 8260B	--			8.72	U		--			--		10.5	U		9.85	U		--			--			300		
2,2-Dichloropropane	µg/kg	EPA 8260B	--			6.48	U		--			--		7.81	U		7.33	U		--			--			--		

Please refer to notes at end of table.

Table 4
 Vector 2.2 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.2																								JSCS Screening Levels			
				090310-2-2.2- Surface-11-WS			090310-2-2.2- 1.5-01-FS			090310-2-2.2- 10-03-FS			090310-2-2.2- 20-05-FS			090310-2-2.2- 25-06-FS			090310-2-2.2- 25-07-Dup			090310-2-2.2- 30-08-FS			090310-2-2.2- 40-10-FS						
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		Result	Flag	Exceedance
				Sample Date: 9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010						
				Depth (Feet Below Ground Surface): 0			0 - 1.5			10 - 15			20 - 25			25 - 30			25 - 30			30 - 35			40 - 45						
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	
VOCs (continued)	2-Butanone	µg/ka	EPA 8260B	--			26,200	U		--			--			31,500	U		29,600	U		--			--			--			--
	2-Chlorotoluene	µg/ka	EPA 8260B	--			6,120	U		--			--			7,380	U		6,920	U		--			--			--			--
	2-Hexanone	µg/ka	EPA 8260B	--			29,200	U		--			--			35,100	U		33,000	U		--			--			--			--
	4-Chlorotoluene	µg/ka	EPA 8260B	--			4,470	U		--			--			5,390	U		5,050	U		--			--			--			--
	4-Methyl-2-pentanone	µg/ka	EPA 8260B	--			19,700	U		--			--			23,700	U		22,200	U		--			--			--			--
	Acetone	µg/ka	EPA 8260B	--			619,000	U		--			--			746,000	U		700,000	U		--			--			--			--
	Benzene	µg/ka	EPA 8260B	--			4,360	U		--			--			5,250	U		4,930	U		--			--			--			--
	Bromobenzene	µg/ka	EPA 8260B	--			12,900	U		--			--			15,500	U		14,600	U		--			--			--			--
	Bromochloromethane	µg/ka	EPA 8260B	--			10,000	U		--			--			12,100	U		11,400	U		--			--			--			--
	Bromodichloromethane	µg/ka	EPA 8260B	--			10,500	U		--			--			12,700	U		11,900	U		--			--			--			--
	Bromoform	µg/ka	EPA 8260B	--			9,480	U		--			--			11,400	U		10,700	U		--			--			--			--
	Bromomethane	µg/ka	EPA 8260B	--			8,290	U		--			--			10,000	U		9,380	U		--			--			--			--
	Carbon disulfide	µg/ka	EPA 8260B	--			7,410	U		--			--			8,930	U		8,370	U		--			--			--			--
	Carbon tetrachloride	µg/ka	EPA 8260B	--			11,300	U		--			--			13,700	U		12,800	U		--			--			--			--
	Chlorobenzene	µg/ka	EPA 8260B	--			3,160	U		--			--			3,810	U		3,580	U		--			--			--			--
	Chloroethane	µg/ka	EPA 8260B	--			19,100	U		--			--			23,000	U		21,500	U		--			--			--			--
	Chloroform	µg/ka	EPA 8260B	--			5,600	U		--			--			6,760	U		6,340	U		--			--			--			--
	Chloromethane	µg/ka	EPA 8260B	--			7,200	U		--			--			8,680	U		8,140	U		--			--			--			--
	cis-1,2-Dichloroethene	µg/ka	EPA 8260B	--			11,100	U		--			--			13,400	U		12,600	U		--			--			--			--
	cis-1,3-Dichloropropene	µg/ka	EPA 8260B	--			4,740	U		--			--			5,710	U		5,360	U		--			--			--			--
	Dibromochloromethane	µg/ka	EPA 8260B	--			7,640	U		--			--			9,210	U		8,640	U		--			--			--			--
	Dibromomethane	µg/ka	EPA 8260B	--			4,890	U		--			--			5,900	U		5,530	U		--			--			--			--
	Dichlorodifluoromethane	µg/ka	EPA 8260B	--			7,410	U		--			--			8,930	U		8,370	U		--			--			--			--
	Ethylbenzene	µg/ka	EPA 8260B	--			2,920	U		--			--			3,510	U		3,300	U		--			--			--			--
	Hexachlorobutadiene	µg/ka	EPA 8260B	--			9,160	U		--			--			11,000	U		10,400	U		--			--			--			--
	Isopropylbenzene	µg/ka	EPA 8260B	--			7,640	U		--			--			9,210	U		8,640	U		--			--			--			--
	m,p-Xylene	µg/ka	EPA 8260B	--			18,300	U		--			--			22,100	U		20,700	U		--			--			--			--
	Methyl tert-butyl ether	µg/ka	EPA 8260B	--			5,600	U		--			--			6,760	U		6,340	U		--			--			--			--
	Methylene chloride	µg/ka	EPA 8260B	--			8,240	J		--			--			14,900	J		12,800	J		--			--			--			--
	Naphthalene	µg/ka	EPA 8260B	--			7,930	U		--			--			29,800	J		92,000	J		--			--			--			--
n-Butylbenzene	µg/ka	EPA 8260B	--			6,590	U		--			--			7,950	U		9,320	J		--			--			--			--	
n-Propylbenzene	µg/ka	EPA 8260B	--			7,240	U		--			--			8,730	U		8,190	U		--			--			--			--	
o-Xylene	µg/ka	EPA 8260B	--			6,670	U		--			--			8,030	U		7,540	U		--			--			--			--	
p-Isopropyltoluene	µg/ka	EPA 8260B	--			9,970	U		--			--			12,000	U		11,300	U		--			--			--			--	
sec-Butylbenzene	µg/ka	EPA 8260B	--			5,240	U		--			--			6,320	U		5,930	U		--			--			--			--	
Styrene	µg/ka	EPA 8260B	--			3,230	U		--			--			3,900	U		3,660	U		--			--			--			--	
tert-Butylbenzene	µg/ka	EPA 8260B	--			10,100	U		--			--			12,100	U		11,400	U		--			--			--			--	
Tetrachloroethene	µg/ka	EPA 8260B	--			14,800	U		--			--			17,900	U		16,800	U		--			--			--			500	
Toluene	µg/ka	EPA 8260B	--			3,610	U		--			--			4,350	U		4,080	U		--			--			--			--	
trans-1,2-Dichloroethene	µg/ka	EPA 8260B	--			6,040	U		--			--			7,280	U		6,830	U		--			--			--			--	
trans-1,3-Dichloropropene	µg/ka	EPA 8260B	--			6,040	U		--			--			7,280	U		6,830	U		--			--			--			--	
Trichloroethene	µg/ka	EPA 8260B	--			7,480	U		--			--			9,020	U		8,460	U		--			--			--			2100	
Trichlorofluoromethane	µg/ka	EPA 8260B	--			32,000	U		--			--			38,600	U		36,200	U		--			--			--			--	
Vinyl chloride	µg/ka	EPA 8260B	--			7,710	U		--			--			9,290	U		8,710	U		--			--			--			--	
SVOCs	1,2,4-Trichlorobenzene	µg/ka	EPA 8270C	--			522	U		--			--			2,580	U		599	U		--			--			--			--
	1,2-Dichlorobenzene	µg/ka	EPA 8270C	--			522	U		--			--			2,580	U		599	U		--			--			--			1,700
	1,3-Dichlorobenzene	µg/ka	EPA 8270C	--			522	U		--			--			2,580	U		599	U		--			--			--			300
	1,4-Dichlorobenzene	µg/ka	EPA 8270C	--			522	U		--			--			2,580	U		599	U		--			--			--			300
	2,4,5-Trichlorophenol	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--			--
	2,4,6-Trichlorophenol	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--			--
	2,4-Dichlorophenol	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--			--
	2,4-Dimethylphenol	µg/ka	EPA 8270C	--			73.0	U		--			--			2,580	U		599	U		--			--			--			--
2,4-Dinitrophenol	µg/ka	EPA 8270C	--			73.0	U		--			--			10,300	U		2,400	U		--			--			--			--	

Please refer to notes at end of table.

Table 4
 Vector 2.2 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.2																								JSCS Screening Levels		
				090310-2-2.2- Surface-11-WS			090310-2-2.2- 1.5-01-FS			090310-2-2.2- 10-03-FS			090310-2-2.2- 20-05-FS			090310-2-2.2- 25-06-FS			090310-2-2.2- 25-07-Dup			090310-2-2.2- 30-08-FS			090310-2-2.2- 40-10-FS					
				Sample Date: 9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010					
				Depth (Feet Below Ground Surface): 0			0 - 1.5			10 - 15			20 - 25			25 - 30			25 - 30			30 - 35			40 - 45					
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance				
SVOCs (continued)	2,4-Dinitrotoluene	µg/ka	EPA 8270C	--			522	U		--			--			2,580	U		599	U		--			--			--		
	2,6-Dinitrotoluene	µg/ka	EPA 8270C	--			2,090	U		--			--			2,580	U		599	U		--			--			--		
	2-Chloronaphthalene	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--		
	2-Chlorophenol	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--		
	2-Methylphenol	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		
	2-Nitroaniline	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		
	2-Nitrophenol	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		
	3,3'-Dichlorobenzidine	µg/ka	EPA 8270C	--			73.0	U		--			--			2,580	U		599	U		--			--			--		
	3,4-Methylphenol	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		
	3-Nitroaniline	µg/ka	EPA 8270C	--			522	U		--			--			2,580	U		599	U		--			--			--		
	4,6-Dinitro-2-methylphenol	µg/ka	EPA 8270C	--			73.0	U		--			--			2,580	U		599	U		--			--			--		
	4-Bromophenyl phenyl ether	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--		
	4-Chloro-3-methylphenol	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--		
	4-Chloroaniline	µg/ka	EPA 8270C	--			73.0	U		--			--			850	U		198	U		--			--			--		
	4-Chlorophenyl phenyl ether	µg/ka	EPA 8270C	--			73.0	U		--			--			515	U		120	U		--			--			--		
	4-Nitroaniline	µg/ka	EPA 8270C	--			172	U		--			--			361	U		83.9	U		--			--			--		
	4-Nitrophenol	µg/ka	EPA 8270C	--			104	U		--			--			2,580	U		599	U		--			--			--		
	Benzoic Acid	µg/ka	EPA 8270C	--			73.0	U		--			--			2,580	U		599	U		--			--			--		
	Benzyl Alcohol	µg/ka	EPA 8270C	--			522	U		--			--			5,150	U		1,200	U		--			--			--		
	Bis(2-chloroethoxy)methane	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--		
	Bis(2-chloroethyl)ether	µg/ka	EPA 8270C	--			1,040	U		--			--			361	U		83.9	U		--			--			--		
	Bis(2-chloroisopropyl)ether	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		
	Dibenzofuran	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		
	Hexachlorobenzene	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		19
	Hexachlorobutadiene	µg/ka	EPA 8270C	--			73.0	U		--			--			2,580	U		599	U		--			--			--		600
	Hexachlorocyclopentadiene	µg/ka	EPA 8270C	--			73.0	U		--			--			2,580	U		599	U		--			--			--		400
	Hexachloroethane	µg/ka	EPA 8270C	--			522	U		--			--			2,580	U		599	U		--			--			--		--
	Isophorone	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--		--
	Nitrobenzene	µg/ka	EPA 8270C	--			522	U		--			--			361	U		83.9	U		--			--			--		--
	N-Nitrosodi-n-propylamine	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		--
	N-Nitrosodiphenylamine	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		--
	Pentachlorophenol	µg/ka	EPA 8270C	--			73.0	U		--			--			2,580	U		599	U		--			--			--		250
Phenol	µg/ka	EPA 8270C	--			73.0	U		--			--			361	U		83.9	U		--			--			--		50	
PAHs	2-Methylnaphthalene	µg/ka	EPA 8270M	17.6	U		522.00	U		4.02	U		4.25	U		4.19	U		3.95	U		65.9			4.85	U		200		
	Acenaphthene	µg/ka	EPA 8270M	17.6	U		73.00	U		4.02	U		4.25	U		4.19	U		3.95	U		172			4.85	U		300		
	Acenaphthylene	µg/ka	EPA 8270M	17.6	U		3.43	U		4.02	U		4.25	U		4.19	U		3.95	U		4.04	U		4.85	U		200		
	Anthracene	µg/ka	EPA 8270M	17.6	U		3.43	U		4.59	J		4.25	U		4.19	U		3.95	U		4.20	J		4.85	U		845		
	Benzo(a)anthracene	µg/ka	EPA 8270M	90.4			3.43	U		14.5	J		4.25	U		4.19	U		3.95	U		9.25	J		4.85	U		1050		
	Benzo(a)pyrene	µg/ka	EPA 8270M	133			3.43	U		13.4	J		4.25	U		4.94	J		5.11	J		12.0	J		4.85	U		1450		
	Benzo(b)fluoranthene	µg/ka	EPA 8270M	185			3.43	U		11.4	J		4.25	U		4.85	J		4.11	J		10.6	J		4.85	U		--		
	Benzo(ghi)perylene	µg/ka	EPA 8270M	145			3.43	U		7.88	J		4.25	U		4.57	J		6.24	J		12.4	J		4.85	U		300		
	Benzo(k)fluoranthene	µg/ka	EPA 8270M	121			3.43	U		12.3	J		4.25	U		4.19	U		3.95	U		9.36	J		4.85	U		13000		
	Chrysene	µg/ka	EPA 8270M	173			3.43	U		15.4	J		4.30	U		6.15	J		4.44	J		13.6	J		4.85	U		1290		
	Dibenzo(a,h)anthracene	µg/ka	EPA 8270M	35.1	J		3.43	U		4.02	U		4.25	U		4.19	U		3.95	U		4.04	U		4.85	U		1300		
	Fluoranthene	µg/ka	EPA 8270M	180			3.43	U		25.9	J		4.48	J		7.49	J		4.50	J		22.9	J		4.85	U		2230		
	Fluorene	µg/ka	EPA 8270M	17.6	U		3.43	U		4.02	U		4.25	U		4.19	U		3.95	U		76.8			4.85	U		536		
	Indeno(1,2,3-cd)pyrene	µg/ka	EPA 8270M	112		1.1	3.43	U		7.22	J		4.25	U		4.19	U		3.95	U		8.96	J		4.85	U		100		
	Naphthalene	µg/ka	EPA 8270M	17.6	U		3.43	U		4.02	U		42.0			4.19	U		6.12	J		40.7			4.85	U		561		
	Phenanthrene	µg/ka	EPA 8270M	93.7			3.43	U		16.8			4.25	U		7.99	J		4.44	J		40.0			4.85	U		1170		
	Pyrene	µg/ka	EPA 8270M	176			3.43	U		23.3			6.40	J		11.0	J		6.21	J		26.4			4.85	U		1520		

Please refer to notes at end of table.

Table 4
 Vector 2.2 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.2																								JSCS Screening Levels
				090310-2-2.2- Surface-11-WS			090310-2-2.2- 1.5-01-FS			090310-2-2.2- 10-03-FS			090310-2-2.2- 20-05-FS			090310-2-2.2- 25-06-FS			090310-2-2.2- 25-07-Dup			090310-2-2.2- 30-08-FS			090310-2-2.2- 40-10-FS			
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	
Sample Date				9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010			
Depth (Feet Below Ground Surface)				0			0 - 1.5			10 - 15			20 - 25			25 - 30			25 - 30			30 - 35			40 - 45			
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	628		1.9	13.9	U		16.5	U		17.1	U		34.4	U		30.4	J		23.9	J		19.4	UJ		330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	144	U		13.9	U		16.5	U		17.1	U		34.4	U		16.2	U		16.6	U		19.4	UJ		--
	Diethyl phthalate	µg/kg	EPA 8270M	144	U		13.9	U		16.5	U		17.1	U		34.4	U		16.2	U		16.6	U		19.4	UJ		600
	Dimethyl phthalate	µg/kg	EPA 8270M	144	U		13.9	U		16.5	U		17.1	U		34.4	U		16.2	U		16.6	U		19.4	UJ		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	144	U	2.4	13.9	U		16.5	U		17.1	U		34.4	U		16.2	U		16.6	U		19.4	UJ		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	144	U		13.9	U		16.5	U		17.1	U		34.4	U		16.2	U		16.6	U		19.4	UJ		--
Organotins	Dibutyltin	µg/kg	PSEP	22			0.42	U		0.51	U		0.52	U		0.47	U		0.47	U		0.50	U		--			--
	Monobutyltin	µg/kg	PSEP	0.40	U		0.39	U		0.49	U		0.49	U		0.44	U		0.45	U		0.47	U		--			--
	Tetra-n-butyltin	µg/kg	PSEP	1.2	U		1.2	U		1.5	U		1.5	U		1.4	U		1.4	U		1.5	U		--			--
	Tributyltin	µg/kg	PSEP	300		130.4	0.89	U		1.1	U		1.1	U		1.0	U		1.0	U		1.1	U		--			2.3
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	31.9			1.76	J		2.29	J		2.10	J		3.42	J		2.76	J		10.0	J		--			--
	Heavy Oil	mg/kg	NWTPH-Dx	229			10.5	J		4.11	J		5.59	J		14.9	J		6.62	J		25.6	J		--			--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation

Table 5
 Vector 2.3 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.3																		JSCS Screening Levels		
				090310-2-2.3- Surface-11-WS			090310-2-2.3- 1.5-01-FS			090310-2-2.3- 15-04-FS			090310-2-2.3- 25-06-FS			090310-2-2.3- 30-07-FS			090310-2-2.3- 30-08-Dup					
				Date			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010					
				Depth (Feet Below Ground Surface)			0			0 - 1.5			15 - 20			25 - 30			30 - 35				30 - 35	
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	
Inorganics	Mercury	mg/kg	EPA 7471A	0.0540	J		0.0500	J		0.0723	J	1.0	0.366		5.2	0.0769		1.1	0.0528	J		0.07		
	Arsenic	mg/kg	EPA 6020	12.7		1.8	9.34		1.3	8.27		1.2	15.9		2.3	13.9		2.0	9.36		1.3	7		
	Barium	mg/kg	EPA 6020	310			148			190			180			256	J		163	J		--		
	Chromium	mg/kg	EPA 6020	95.0			22.7			33.4			56			32.0	J		29.9	J		111		
	Copper	mg/kg	EPA 6020	340		2.3	29.3			77.1			94.4			86.3			56.0			149		
	Lead	mg/kg	EPA 6020	127		7.5	69.8		4.1	149		8.8	134		7.9	175		10.3	134		7.9	17		
	Manganese	mg/kg	EPA 6020	1,670		1.5	625			783			766			1,060	J		659	J		1,100		
	Nickel	mg/kg	EPA 6020	61.2		1.3	16.6			36.8			47.6			64.4		1.3	46.6			48.6		
	Selenium	mg/kg	EPA 6020	0.391	J		0.183	J		0.183	J		0.180	J		0.236	J		0.0965	J		2.0		
	Silver	mg/kg	EPA 6020	0.335	J		0.122	J		0.336	J		0.390	J		0.472	J		0.317	J		5		
Zinc	mg/kg	EPA 6020	570		1.2	123			202			311			546	J	1.2	241	J		459			
PCBs	Aroclor 1016	µg/kg	EPA 8082	7.81	U		2.02	U		4.06	U		2.04	U		2.01	U		2.38	U		530		
	Aroclor 1221	µg/kg	EPA 8082	15.6	U		4.03	U		8.10	U		4.06	U		4.00	U		4.74	U		--		
	Aroclor 1232	µg/kg	EPA 8082	7.81	U		2.02	U		4.06	U		2.04	U		2.01	U		2.38	U		--		
	Aroclor 1242	µg/kg	EPA 8082	7.81	U		2.02	U		4.06	U		2.04	U		2.01	U		2.38	U		--		
	Aroclor 1248	µg/kg	EPA 8082	7.81	U		2.02	U		4.06	U		2.04	U		2.01	U		2.38	U		1,500		
	Aroclor 1254	µg/kg	EPA 8082	93.9			2.82	J		53.7			24.1			23.7	J		7.62	J		300		
	Aroclor 1260	µg/kg	EPA 8082	7.81	U		2.02	U		4.06	U		2.04	U		2.01	U		2.38	U		200		
	Aroclor 1262	µg/kg	EPA 8082	7.81	U		2.02	U		4.06	U		2.04	U		2.01	U		2.38	U		--		
	Aroclor 1268	µg/kg	EPA 8082	7.81	U		2.02	U		4.06	U		2.04	U		2.01	U		2.38	U		--		
Total PCBs	µg/kg	EPA 8082	93.9		240.8	2.82	J	7.2	53.7		137.7	24.1		61.8	23.7	J	60.8	7.62	J	19.5	0.39			
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	19.3	U		4.00	U		20.7			10.8	J		7.04	J		6.65	J		200		
	Acenaphthene	µg/kg	EPA 8270M	19.3	U		4.00	U		51.7			50.3			6.91	J		10.2	J		300		
	Acenaphthylene	µg/kg	EPA 8270M	47.6	J		7.82	J		44.4			67.6			6.76	J		6.16	J		200		
	Anthracene	µg/kg	EPA 8270M	134			9.19	J		108			171			20.5			17.5	J		845		
	Benzo(a)anthracene	µg/kg	EPA 8270M	214			32.90			242			470			54.9	J		35.7	J		1050		
	Benzo(a)pyrene	µg/kg	EPA 8270M	126			41.60			262			417			81.8	J		48.1	J		1450		
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	509			31.10			170			250			87.2	J		40.3	J		--		
	Benzo(ghi)perylene	µg/kg	EPA 8270M	174			34.90			136			200			45.7			38.5			300		
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	295			30.80			190			294			46.3			39.8			13000		
	Chrysene	µg/kg	EPA 8270M	754			40.70			267			500			116	J		60.0	J		1290		
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	38.2	J		8.64	J		36.2			54.7			12.1	J		7.52	J		1300		
	Fluoranthene	µg/kg	EPA 8270M	1,010			60.20			428			764			118			110			2230		
	Fluorene	µg/kg	EPA 8270M	25.5	J		4.00	U		64.4			48.6			13.3	J		14.2	J		536		
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	115		1.2	26.20			124		1.2	183		1.8	35.3			29.6			100		
	Naphthalene	µg/kg	EPA 8270M	19.3	U		4.00	U		23.1			16.8			7.15	J		24.4			561		
Phenanthrene	µg/kg	EPA 8270M	288			43.5			325			392			109			96.6			1170			
Pyrene	µg/kg	EPA 8270M	743			84.9			525			1,020			130			124			1520			

Please refer to notes at end of table.

Table 5
 Vector 2.3 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.3																		JSCS Screening Levels	
				090310-2-2.3- Surface-11-WS			090310-2-2.3- 1.5-01-FS			090310-2-2.3- 15-04-FS			090310-2-2.3- 25-06-FS			090310-2-2.3- 30-07-FS			090310-2-2.3- 30-08-Dup				
				Date			9/3/2010			9/3/2010			9/3/2010			9/3/2010			9/3/2010				
Depth (Feet Below Ground Surface)			0			0 - 1.5			15 - 20			25 - 30			30 - 35			30 - 35					
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	779		2.4	26.2	J		16.3	U		17.7	J		46.9			22.5	J		330	
	Butyl benzyl phthalate	µg/kg	EPA 8270M	155	U		16.3	U		16.3	U		16.3	U		16.0	U		19.0	U		--	
	Diethyl phthalate	µg/kg	EPA 8270M	155	U		16.3	U		16.3	U		39.1	U		16.0	U		19.0	U		600	
	Dimethyl phthalate	µg/kg	EPA 8270M	155	U		16.3	U		16.3	U		16.3	U		16.0	U		19.0	U		--	
	Di-n-butyl phthalate	µg/kg	EPA 8270M	750		12.5	16.3	U		16.3	U		16.3	U		16.0	U		19.0	U		60	
	Di-n-octyl phthalate	µg/kg	EPA 8270M	155	U		16.3	U		16.3	U		16.3	U		16.0	U		19.0	U		--	
Organotins	Dibutyltin	µg/kg	PSEP	0.48	U		0.48	U		0.49	U		0.50	U		0.55	U		0.58	U		--	
	Monobutyltin	µg/kg	PSEP	0.45	U		0.46	U		0.46	U		0.47	U		0.52	U		0.55	U		--	
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.4	U		1.4	U		1.5	U		1.6	U		1.7	U		--	
	Tributyltin	µg/kg	PSEP	33		14.3	1.0	U		1.0	U		1.1	U		1.2	U		1.2	U		2.3	
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	45.5			5.22	J		41.9			25.3			99.3			65.9			--	
	Heavy Oil	mg/kg	NWTPH-Dx	408			50.6			100			78.4			353	J		134	J		--	

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 6
 Vector 2.4 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.4																					JSCS Screening Levels				
				090710-2-2.4-5-02-FS			090710-2-2.4-10-03-FS			090710-2-2.4-15-04-FS			090710-2-2.4-20-05-FS			090710-2-2.4-25-07-FS			090710-2-2.4-30-08-FS			090710-2-2.4-30-09-FS-Dup				090710-2-2.4-35-10-FS			
				Date			9/7/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010				9/7/2010			
				Depth (Feet Below Ground Surface)			5 - 10			10 - 15			15 - 20			20 - 25			25 - 30			30 - 35				30 - 35			35 - 40
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
Inorganics	Mercury	mg/kg	EPA 7471A	0.149		2.1	0.0737	J	1.1	--		0.0136	J		0.0244	J		0.0352	J		0.141		2.0	0.00840	J		0.07		
	Arsenic	mg/kg	EPA 6020	23.8		3.4	7.59		1.1	--		7.22		1.0	2.51		2.98		4.3		2.77		108			7			
	Barium	mg/kg	EPA 6020	342			151			--		159			78.1		97.8		149		108					--			
	Chromium	mg/kg	EPA 6020	56.4	J		32.8			--		134		1.2	15.5	J	17.6	J	27.9	J	18.1	J				111			
	Copper	mg/kg	EPA 6020	100			48.3			--		58.7			16.1	J	16.7	J	32.6	J	15.8	J				149			
	Lead	mg/kg	EPA 6020	204	J	12.0	93.7		5.5	--		65.3		3.8	3.67	J	6.84	J	11.1	J	5.08	J				17			
	Manganese	mg/kg	EPA 6020	2,020		1.8	964			--		1,250		1.1	235		270		393		286					1,100			
	Nickel	mg/kg	EPA 6020	40.6			24.4			--		84.6		1.7	16.5		18.6		23.7		18.7					48.6			
	Selenium	mg/kg	EPA 6020	0.312	J		0.110	J		--		0.059	J		0.0239	J	0.0131	J	0.0613	J	0.0267	J				2.0			
	Silver	mg/kg	EPA 6020	0.371	J		0.178	J		--		0.155	J		0.0538	J	0.0788	J	0.136	J	0.0400	J				5			
	Zinc	mg/kg	EPA 6020	658		1.4	192			--		172			45.1		54.3		68.3		47.9						459		
PCBs	Aroclor 1016	µg/kg	EPA 8082	1.96	U		1.82	U	--			1.87	U		2.05	U		2.26	U		2.39	U				2.25	U	530	
	Aroclor 1221	µg/kg	EPA 8082	3.90	U		3.63	U	--			3.74	U		4.08	U		4.48	U		4.76	U				4.48	U	--	
	Aroclor 1232	µg/kg	EPA 8082	1.96	U		1.82	U	--			1.87	U		2.05	U		2.26	U		2.39	U				2.25	U	--	
	Aroclor 1242	µg/kg	EPA 8082	1.96	U		1.82	U	--			1.87	U		2.05	U		2.26	U		2.39	U				2.25	U	--	
	Aroclor 1248	µg/kg	EPA 8082	1.96	U		1.82	U	--			1.87	U		2.05	U		2.26	U		2.39	U				2.25	U	1,500	
	Aroclor 1254	µg/kg	EPA 8082	1.96	U		1.82	U	--			1.87	U		2.05	U		2.26	U		2.39	U				2.25	U	300	
	Aroclor 1260	µg/kg	EPA 8082	1.96	U		8.16			--		2.63	J		2.05	U		2.26	U		2.39	U				2.25	U	200	
	Aroclor 1262	µg/kg	EPA 8082	9.61	J		1.82	U		--		1.87	U		2.05	U		2.26	U		2.39	U				2.25	U	--	
	Aroclor 1268	µg/kg	EPA 8082	1.96	U		1.82	U		--		1.87	U		2.05	U		2.26	U		2.39	U				2.25	U	--	
	Total PCBs	µg/kg	EPA 8082	9.61	J	24.6	8.16		20.9	--		2.63	J	6.7	20.5	U	52.6		22.6	U	57.9	24.0	U	61.5		22.5	U	57.7	0.39
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	38.7	J		3.62	U		19.0	U			7.35	U		4.04	U		4.66	U				4.39	U		200	
	Acenaphthene	µg/kg	EPA 8270M	19.4	U		3.62	U		19.0	U			7.35	U		4.04	U		4.66	U				4.39	U		300	
	Acenaphthylene	µg/kg	EPA 8270M	19.4	U		8.26	J		19.0	U			7.71	J		4.04	U		4.66	U				4.39	U		200	
	Anthracene	µg/kg	EPA 8270M	26.3	J		8.79	J		19.0	U			11.9	J		4.04	U		4.55	J				6.33	J	14.5	J	845
	Benzo(a)anthracene	µg/kg	EPA 8270M	145			45.3			19.0	U			80.2			4.04	U		25.6					19.2		32.8		1050
	Benzo(a)pyrene	µg/kg	EPA 8270M	238			55.4			31.6	J			143			4.04	U		41.0	J				22.2	J	25.8		1450
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	256			42.5			30.0	J			140			4.04	U		24.5					13.1	J	17.2	J	--
	Benzo(ghi)perylene	µg/kg	EPA 8270M	255			40.2			38.8	J			122			4.04	U		40.3					17.1	J	10.5	J	300
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	198			38.1			22.9	J			102			4.04	U		24.9					14.8	J	23.4		13000
	Chrysene	µg/kg	EPA 8270M	219			52.4			33.8	J			122			4.04	U		28.9					21.8		29.5		1290
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	80.7			10.4	J		19.0	U			34.3			4.04	U		4.50	U				4.66	U	4.39	U	1300
	Fluoranthene	µg/kg	EPA 8270M	183			66.8			27.8	J			95.7			4.04	U		49.6	J				32.2	J	48.4		2230
	Fluorene	µg/kg	EPA 8270M	19.4	U		3.62	U		19.0	U			7.35	U		4.04	U		4.50	U				4.66	U	4.39	U	536
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	202		2.0	30.9			28.9	J			96.7			4.04	U		26.5					12.3	J	10.8	J	100
	Naphthalene	µg/kg	EPA 8270M	64.2	J		3.62	U		19.0	U			7.35	U		4.04	U		4.50	U				4.66	U	4.39	U	561
	Phenanthrene	µg/kg	EPA 8270M	141			35.0			23.3	J			57.3			4.04	U		19.6					18.5	J	10.8	J	1170
	Pyrene	µg/kg	EPA 8270M	205			89.4			30.4	J			114			6.50	J		90.8	J				48.9	J	44.3		1520

Please refer to notes at end of table.

Table 6
 Vector 2.4 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.4																								JSCS Screening Levels	
				090710-2-2.4-5-02-FS			090710-2-2.4-10-03-FS			090710-2-2.4-15-04-FS			090710-2-2.4-20-05-FS			090710-2-2.4-25-07-FS			090710-2-2.4-30-08-FS			090710-2-2.4-30-09-FS-Dup			090710-2-2.4-35-10-FS				
				Date			9/7/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010				
				Depth (Feet Below Ground Surface)			5 - 10			10 - 15			15 - 20			20 - 25			25 - 30			30 - 35			30 - 35				35 - 40
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	78.7	U		14.7	U		--			74.6	U		16.4	U		18.3	U		18.9	U		17.8	U		330	
	Butyl benzyl phthalate	µg/kg	EPA 8270M	78.7	U		14.7	U		--			74.6	U		16.4	U		18.3	U		18.9	U		17.8	U		--	
	Diethyl phthalate	µg/kg	EPA 8270M	78.7	U		14.7	U		--			74.6	U		16.4	U		18.3	U		18.9	U		17.8	U		600	
	Dimethyl phthalate	µg/kg	EPA 8270M	78.7	U		14.7	U		--			74.6	U		16.4	U		18.3	U		18.9	U		17.8	U		--	
	Di-n-butyl phthalate	µg/kg	EPA 8270M	78.7	U	1.3	14.7	U		--			74.6	U		16.4	U		18.3	U		18.9	U		17.8	U		60	
	Di-n-octyl phthalate	µg/kg	EPA 8270M	78.7	U		73.6	U		--			149	U		16.4	U		18.3	U		18.9	U		17.8	U		--	
Organotins	Dibutyltin	µg/kg	PSEP	0.49	U		0.46	U		--			0.47	U		0.59	U		0.55	U		0.62	U		0.52	U		--	
	Monobutyltin	µg/kg	PSEP	0.46	U		0.44	U		--			0.45	U		0.56	U		0.53	U		0.59	U		0.50	U		--	
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.3	U		--			1.4	U		1.7	U		1.6	U		1.8	U		1.5	U		--	
	Tributyltin	µg/kg	PSEP	1.0	U		1.0	U		--			1.0	U		1.3	U		1.2	U		1.3	U		1.1	U		2.3	
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	40.1			49.9						140	J		1.41	J		3.28	J		7.06	J		1.04	J		--	
	Heavy Oil	mg/kg	NWTPH-Dx	372			431						1,250	J		2.19	J		5.79	J		12.2	J		0.941	U		--	

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 7
 Vector 2.5 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.5																			JSCS Screening Levels			
				090810-2-2.5-00-10-WS			090710-2-2.5-5-02-FS			090710-2-2.5-15-04-FS			090710-2-2.5-25-06-FS			090710-2-2.5-30-07-FS			090710-2-2.5-40-08-FS			090710-2-2.5-40-09-FS				
				Date			9/8/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010				
				Depth (Feet Below Ground Surface)			0			5 - 10			15 - 20			25 - 30			30 - 35			35 - 40			40 - 45	
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
Inorganics	Mercury	mg/kg	EPA 7471A	0.0379	J		0.133		1.9	0.0745	J	1.1	0.0662	J		0.0712	J	1.0	0.0141	J		0.00610	U		0.07	
	Arsenic	mg/kg	EPA 6020	205	J	29.3	10.0		1.4	14.7	J	2.1	3.77	J		2.97	J		3.40	J		3.30	U		7	
	Barium	mg/kg	EPA 6020	463			324			339			114			105			117			92.3			--	
	Chromium	mg/kg	EPA 6020	123		1.1	31.2			27.5			31.5			23.1			16.6			14.6			111	
	Copper	mg/kg	EPA 6020	1,880		12.6	68.0			44.7			30.3			20.1			16.3			14.8			149	
	Lead	mg/kg	EPA 6020	459		27.0	216		12.7	169		9.9	16.3			9.34			2.99			2.59			17	
	Manganese	mg/kg	EPA 6020	2,350		2.1	384			984			396			303			281			259			1,100	
	Nickel	mg/kg	EPA 6020	170		3.5	21.2			23.7			27.7			23.2			17.6			16.1			48.6	
	Selenium	mg/kg	EPA 6020	0.472	J		0.0736	J		0.0616	J		0.0454	J		0.033	J		0.0267	J		0.0066	J		2.0	
	Silver	mg/kg	EPA 6020	1.67			0.136	J		0.222	J		0.280	J		0.072	J		0.0468	J		0.0396	J		5	
Zinc	mg/kg	EPA 6020	2,460		5.4	321			403			95.8			61.8			47.5			44.5			459		
PCBs	Aroclor 1016	µg/kg	EPA 8082	1.83	U		18.9	U		2.05	U		2.54	U		2.24	U		2.30	U		2.25	U		530	
	Aroclor 1221	µg/kg	EPA 8082	3.64	U		37.8	U		4.08	U		5.06	U		4.47	U		4.58	U		4.48	U		--	
	Aroclor 1232	µg/kg	EPA 8082	1.83	U		18.9	U		2.05	U		2.54	U		2.24	U		2.30	U		2.25	U		--	
	Aroclor 1242	µg/kg	EPA 8082	1.83	U		18.9	U		2.05	U		2.54	U		2.24	U		2.30	U		2.25	U		--	
	Aroclor 1248	µg/kg	EPA 8082	1.83	U		18.9	U		2.05	U		2.54	U		2.24	U		2.30	U		2.25	U		1,500	
	Aroclor 1254	µg/kg	EPA 8082	1.83	U		271	U		10.2	U		2.54	U		2.24	U		2.30	U		2.25	U		300	
	Aroclor 1260	µg/kg	EPA 8082	1.83	U		18.9	U		2.05	U		2.54	U		2.24	U		2.30	U		2.25	U		200	
	Aroclor 1262	µg/kg	EPA 8082	10.2			18.9	U		16.3			2.54	U		2.24	U		2.30	U		2.25	U		--	
	Aroclor 1268	µg/kg	EPA 8082	1.83	U		18.9	U		2.05	U		2.54	U		2.24	U		2.30	U		2.25	U		--	
	Total PCBs	µg/kg	EPA 8082	10.2		26.2	271		694.9	16.3		41.8	25.4	U	65.1	22.4	U	57.4	23.0	U	59.0	22.5	U	57.7	0.39	
VOCs	1,1,1,2-Tetrachloroethane	µg/kg	EPA 8260B	9.92	U		10.5	U		11.2	U		14.0	U		11.9	U		12.4	U		12.6	U		--	
	1,1,1-Trichloroethane	µg/kg	EPA 8260B	5.36	U		5.66	U		6.07	U		7.59	U		6.45	U		6.70	U		6.79	U		--	
	1,1,2,2-Tetrachloroethane	µg/kg	EPA 8260B	12.1	U		12.8	U		13.7	U		17.2	U		14.6	U		15.2	U		15.4	U		--	
	1,1,2-Trichloroethane	µg/kg	EPA 8260B	7.22	U		7.62	U		8.17	U		10.2	U		8.69	U		9.03	U		9.15	U		--	
	1,1-Dichloroethane	µg/kg	EPA 8260B	7.14	U		7.55	U		8.09	U		10.1	U		8.60	U		8.94	U		9.05	U		--	
	1,1-Dichloroethene	µg/kg	EPA 8260B	12.8	U		13.5	U		14.4	U		18.1	U		15.4	U		16.0	U		16.2	U		--	
	1,1-Dichloropropene	µg/kg	EPA 8260B	8.41	U		8.88	U		9.52	U		11.9	U		10.1	U		10.5	U		10.7	U		--	
	1,2,3-Trichlorobenzene	µg/kg	EPA 8260B	9.97	U		10.5	U		11.3	U		14.1	U		12.0	U		12.5	U		12.6	U		--	
	1,2,3-Trichloropropane	µg/kg	EPA 8260B	6.88	U		7.26	U		7.79	U		9.74	U		8.28	U		8.61	U		8.72	U		--	
	1,2,4-Trichlorobenzene	µg/kg	EPA 8260B	14.8	U		15.6	U		16.7	U		20.9	U		17.8	U		18.5	U		18.7	U		9,200	
	1,2,4-Trimethylbenzene	µg/kg	EPA 8260B	243			16.6	U		17.8	U		22.3	U		18.9	U		19.7	U		19.9	U		--	
	1,2-Dibromo-3-chloropropane	µg/kg	EPA 8260B	43.9	U		46.4	U		49.7	U		62.2	U		52.8	U		54.9	U		55.6	U		--	
	1,2-Dibromoethane	µg/kg	EPA 8260B	11.1	U		11.7	U		12.5	U		15.7	U		13.3	U		13.8	U		14.0	U		--	
	1,2-Dichlorobenzene	µg/kg	EPA 8260B	8.28	U		8.75	U		9.38	U		11.7	U		9.96	U		10.4	U		10.5	U		1,700	
	1,2-Dichloroethane	µg/kg	EPA 8260B	8.06	U		8.51	U		9.13	U		11.4	U		9.70	U		10.1	U		10.2	U		--	
	1,2-Dichloropropane	µg/kg	EPA 8260B	7.14	U		7.55	U		8.09	U		10.1	U		8.60	U		8.94	U		9.05	U		--	
	1,3,5-Trimethylbenzene	µg/kg	EPA 8260B	152			9.21	U		9.87	U		12.3	U		10.5	U		10.9	U		11.0	U		--	
	1,3-Dichlorobenzene	µg/kg	EPA 8260B	6.64	U		7.02	U		7.52	U		9.41	U		7.99	U		8.31	U		8.42	U		300	
	1,3-Dichloropropane	µg/kg	EPA 8260B	7.07	U		7.47	U		8.01	U		10.0	U		8.51	U		8.85	U		8.96	U		--	
	1,4-Dichlorobenzene	µg/kg	EPA 8260B	8.99	U		9.5	U		10.2	U		12.7	U		10.8	U		11.3	U		11.4	U		300	
2,2-Dichloropropane	µg/kg	EPA 8260B	6.69	U		7.06	U		7.57	U		9.47	U		8.05	U		8.37	U		8.47	U		--		
2-Butanone	µg/kg	EPA 8260B	27.0	U		28.5	U		30.6	U		38.2	U		32.5	U		33.8	U		34.2	U		--		
2-Chlorotoluene	µg/kg	EPA 8260B	6.32	U		6.67	U		7.15	U		8.94	U		7.60	U		7.90	U		8.00	U		--		
2-Hexanone	µg/kg	EPA 8260B	30.1	U		31.8	U		34.1	U		42.6	U		36.2	U		37.6	U		38.1	U		--		
4-Chlorotoluene	µg/kg	EPA 8260B	4.61	U		4.87	U		5.23	U		6.53	U		5.55	U		5.77	U		5.85	U		--		
4-Methyl-2-pentanone	µg/kg	EPA 8260B	20.3	U		21.4	U		23.0	U		28.8	U		24.4	U		25.4	U		25.7	U		--		

Please refer to notes at end of table.

Table 7
Vector 2.5 Soil Results
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.5																		JSCS Screening Levels			
				090810-2-2.5-00-10-WS			090710-2-2.5-5-02-FS			090710-2-2.5-15-04-FS			090710-2-2.5-25-06-FS			090710-2-2.5-30-07-FS			090710-2-2.5-40-08-FS				090710-2-2.5-40-09-FS		
				Date			9/8/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010				9/7/2010		
				Depth (Feet Below Ground Surface)			0			5 - 10			15 - 20			25 - 30			30 - 35				35 - 40		
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
VOCs (continued)	Acetone	µg/kg	EPA 8260B	639	U		675	U		724	U		905	U		769	U		800	U		810	U		--
	Benzene	µg/kg	EPA 8260B	4.50	U		4.75	U		5.09	U		6.37	U		5.41	U		5.63	U		5.70	U		--
	Bromobenzene	µg/kg	EPA 8260B	13.3	U		14	U		15.0	U		18.8	U		16.0	U		16.6	U		16.8	U		--
	Bromochloromethane	µg/kg	EPA 8260B	10.4	U		10.9	U		11.7	U		14.7	U		12.5	U		13.0	U		13.1	U		--
	Bromodichloromethane	µg/kg	EPA 8260B	10.8	U		11.5	U		12.3	U		15.4	U		13.0	U		13.6	U		13.7	U		--
	Bromoform	µg/kg	EPA 8260B	9.78	U		10.3	U		11.1	U		13.8	U		11.8	U		12.2	U		12.4	U		--
	Bromomethane	µg/kg	EPA 8260B	8.56	U		9.04	U		9.69	U		12.1	U		10.3	U		10.7	U		10.8	U		--
	Carbon disulfide	µg/kg	EPA 8260B	7.64	U		8.07	U		8.66	U		10.8	U		9.20	U		9.56	U		9.69	U		--
	Carbon tetrachloride	µg/kg	EPA 8260B	11.7	U		12.4	U		13.2	U		16.6	U		14.1	U		14.6	U		14.8	U		--
	Chlorobenzene	µg/kg	EPA 8260B	3.26	U		3.45	U		3.70	U		4.62	U		3.93	U		4.08	U		4.14	U		--
	Chloroethane	µg/kg	EPA 8260B	19.7	U		20.8	U		22.3	U		27.8	U		23.7	U		24.6	U		24.9	U		--
	Chloroform	µg/kg	EPA 8260B	5.78	U		6.11	U		6.55	U		8.19	U		6.96	U		7.24	U		7.33	U		--
	Chloromethane	µg/kg	EPA 8260B	7.43	U		7.85	U		8.42	U		10.5	U		8.94	U		9.30	U		9.42	U		--
	cis-1,2-Dichloroethene	µg/kg	EPA 8260B	11.5	U		12.1	U		13.0	U		16.3	U		13.8	U		14.4	U		14.5	U		--
	cis-1,3-Dichloropropene	µg/kg	EPA 8260B	4.89	U		5.17	U		5.54	U		6.92	U		5.88	U		6.12	U		6.20	U		--
	Dibromochloromethane	µg/kg	EPA 8260B	7.89	U		8.33	U		8.93	U		11.2	U		9.49	U		9.87	U		10.0	U		--
	Dibromomethane	µg/kg	EPA 8260B	5.05	U		5.33	U		5.72	U		7.15	U		6.08	U		6.32	U		6.40	U		--
	Dichlorodifluoromethane	µg/kg	EPA 8260B	7.64	U		8.07	U		8.66	U		10.8	U		9.20	U		9.56	U		9.69	U		--
	Ethylbenzene	µg/kg	EPA 8260B	61.7	J		3.18	U		3.41	U		4.26	U		3.62	U		3.76	U		3.81	U		--
	Hexachlorobutadiene	µg/kg	EPA 8260B	9.45	U		9.98	U		10.7	U		13.4	U		11.4	U		11.8	U		12.0	U		--
	Isopropylbenzene	µg/kg	EPA 8260B	20.2	J		8.33	U		8.93	U		11.2	U		9.49	U		9.87	U		10.0	U		--
	m,p-Xylene	µg/kg	EPA 8260B	273			20.0	U		21.4	U		26.8	U		22.8	U		23.7	U		24.0	U		--
	Methyl tert-butyl ether	µg/kg	EPA 8260B	5.78	U		6.11	U		6.55	U		8.19	U		6.96	U		7.24	U		7.33	U		--
	Methylene chloride	µg/kg	EPA 8260B	11.7	J		12.4	J		21.7	J		36.1	J		10.2	J		18.6	J		17.5	J		--
	Naphthalene	µg/kg	EPA 8260B	246			8.65	U		9.27	U		11.6	U		9.85	U		10.4	U		10.2	U		--
	n-Butylbenzene	µg/kg	EPA 8260B	6.8	U		7.19	U		7.71	U		9.63	U		8.19	U		8.51	U		8.62	U		--
	n-Propylbenzene	µg/kg	EPA 8260B	23.4	J		7.89	U		8.46	U		10.6	U		8.99	U		9.35	U		9.47	U		--
	o-Xylene	µg/kg	EPA 8260B	225			7.26	U		7.79	U		9.74	U		8.28	U		8.61	U		8.72	U		--
	p-Isopropyltoluene	µg/kg	EPA 8260B	10.3	U		10.9	U		11.7	U		14.6	U		12.4	U		12.9	U		13.0	U		--
	sec-Butylbenzene	µg/kg	EPA 8260B	9.57	J		5.72	U		6.13	U		7.66	U		6.51	U		6.77	U		6.86	U		--
Styrene	µg/kg	EPA 8260B	3.34	U		3.53	U		3.78	U		4.73	U		4.02	U		4.18	U		4.23	U		--	
tert-Butylbenzene	µg/kg	EPA 8260B	10.4	U		11.0	U		11.8	U		14.7	U		12.5	U		13.0	U		13.2	U		--	
Tetrachloroethene	µg/kg	EPA 8260B	15.3	U		16.2	U		17.3	U		21.7	U		18.4	U		19.2	U		19.4	U		500	
Toluene	µg/kg	EPA 8260B	20.2	J		3.93	U		4.21	U		5.27	U		4.48	U		4.66	U		4.71	U		--	
trans-1,2-Dichloroethene	µg/kg	EPA 8260B	6.23	U		6.58	U		7.06	U		8.82	U		7.50	U		7.80	U		7.89	U		--	
trans-1,3-Dichloropropene	µg/kg	EPA 8260B	6.23	U		6.58	U		7.06	U		8.82	U		7.50	U		7.80	U		7.89	U		--	
Trichloroethene	µg/kg	EPA 8260B	7.72	U		8.15	U		8.74	U		10.9	U		9.29	U		9.66	U		9.78	U		2100	
Trichlorofluoromethane	µg/kg	EPA 8260B	33.1	U		34.9	U		37.4	U		46.8	U		39.8	U		41.4	U		41.9	U		--	
Vinyl chloride	µg/kg	EPA 8260B	7.95	U		8.4	U		9.01	UJ		11.3	U		9.57	U		9.95	UJ		10.1	U		--	
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	100			27.8	J		32.4	J		5.01	U		4.44	U		4.53	U		4.42	U		200
	Acenaphthene	µg/kg	EPA 8270M	122			29.0	J		20.3	U		13.0	J		12.0	J		4.53	U		4.42	U		300
	Acenaphthylene	µg/kg	EPA 8270M	28.5	J		83.4			125			9.71	J		17.5	J		4.53	U		4.42	U		200
	Anthracene	µg/kg	EPA 8270M	224			171			64.6	J		16.2	J		20.5			4.53	U		4.42	U		845
	Benzo(a)anthracene	µg/kg	EPA 8270M	447			489			390			28.8			77.0			4.53	U		4.42	U		1050

Please refer to notes at end of table.

Table 7
 Vector 2.5 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.5																		JSCS Screening Levels			
				090810-2-2.5-00-10-WS			090710-2-2.5-5-02-FS			090710-2-2.5-15-04-FS			090710-2-2.5-25-06-FS			090710-2-2.5-30-07-FS			090710-2-2.5-40-08-FS				090710-2-2.5-40-09-FS		
				Date			9/8/2010			9/7/2010			9/7/2010			9/7/2010			9/7/2010				9/7/2010		
				Depth (Feet Below Ground Surface)			0			5 - 10			15 - 20			25 - 30			30 - 35				35 - 40		
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
PAHs (continued)	Benzo(a)pyrene	µg/kg	EPA 8270M	446			436			737			39.7			166			4.53	U		4.42	U		1450
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	415			378			597			24.2			105			4.53	U		4.42	U		--
	Benzo(ghi)perylene	µg/kg	EPA 8270M	356		1.2	272			516		1.7	32.7			180			4.53	U		4.42	U		300
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	408			358			760			26.6			82.0			4.53	U		4.42	U		13000
	Chrysene	µg/kg	EPA 8270M	496.0			470			932			32.6			99.0			4.53	U		4.42	U		1290
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	109			97.9			134			5.01	U		15.2	J		4.53	U		4.42	U		1300
	Fluoranthene	µg/kg	EPA 8270M	1,170			864			2,010			62.2			239			4.53	U		4.42	U		2230
	Fluorene	µg/kg	EPA 8270M	154			74.0	J		24.8	J		10.3	J		7.28	J		4.53	U		4.42	U		536
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	313		3.1	249		2.5	470		4.7	22.8			114		1.1	4.53	U		4.42	U		100
	Naphthalene	µg/kg	EPA 8270M	125			54.8	J		60.1	J		7.34	J		11.7	J		4.53	U		4.42	U		561
	Phenanthrene	µg/kg	EPA 8270M	1,240		1.1	662			1,970		1.7	57.5			134			4.53	U		4.42	U		1170
	Pyrene	µg/kg	EPA 8270M	972			689			1,790		1.2	70.6			406			4.53	U		4.42	U		1520
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	294			76.0	U		156			20.4	U		18.0	U		18.4	U		17.9	U		330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	73.6	U		90.0	J		58.3	J		20.4	U		18.0	U		18.4	U		17.9	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	73.6	U		76.0	U		33.0	U		20.4	U		18.0	U		18.4	U		17.9	U		600
	Dimethyl phthalate	µg/kg	EPA 8270M	73.6	U		76.0	U		33.0	U		20.4	U		18.0	U		18.4	U		17.9	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	116	J	1.9	76.0	U	1.3	36.0	J		20.4	U		18.0	U		18.4	U		17.9	U		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	73.6	U		152	U		33.0	U		20.4	U		18.0	U		18.4	U		17.9	U		--
Organotins	Dibutyltin	µg/kg	PSEP	15			0.43	U		0.52	U		0.57	U		0.57	U		0.54	U		0.55	U		--
	Monobutyltin	µg/kg	PSEP	19			0.40	U		0.50	U		0.55	U		0.55	U		4.5	U		4.7	U		--
	Tetra-n-butyltin	µg/kg	PSEP	1.3	U		1.2	U		1.5	U		1.7	U		1.7	U		1.6	U		1.6	U		--
	Tributyltin	µg/kg	PSEP	68		29.6	0.9	U		1.1	U		1.2	U		1.2	U		1.1	U		1.2	U		2.3
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	174			54.5			58.0			4.49	J		7.30	J		1.40	J		1.26	J		--
	Heavy Oil	mg/kg	NWTPH-Dx	663			473			315			14.8	J		12.9	J		0.956	U		1.22	J		--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 8
 Vector 2.6 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.6																		JSCS Screening Levels									
				090810-2-2.6-00-10-WS			090810-2-2.6-5-01-FS			090810-2-2.6-15-03-FS			090810-2-2.6-25-05-FS			090810-2-2.6-25-06-FS			090810-2-2.6-30-07-FS				090810-2-2.6-40-09-FS								
				Date	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010		9/8/2010	9/8/2010	9/8/2010	9/8/2010					
Depth (Feet Below Ground Surface)	0	5 - 10	15 - 20	25 - 30	25 - 30	30 - 35	40 - 45	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance												
Inorganics	Mercury	mg/ka	EPA 7471A	0.045	J		0.00600	J		0.0601	J		0.0249	J		0.299		4.3	0.307		4.4	0.0189	J		0.07						
	Arsenic	mg/ka	EPA 6020	63.1		9.0	3.14		18.4		2.6	5.46		4.86		4.95		4.95	4.95		4.4	3.19	J		7						
	Barium	mg/ka	EPA 6020	257			139		142			198		227		203		203	203			146			--						
	Chromium	mg/ka	EPA 6020	72.9			13.5		27.9			20.9	J		J		37.5		37.5			26.6			111						
	Copper	mg/ka	EPA 6020	687		4.6	28.1		89.7			27.5		41.1		50.1		50.1				22.9			149						
	Lead	mg/ka	EPA 6020	188		11.1	24.2		162		9.5	49.9	J	2.9	J	5.1	J	48.9		2.9		4.14			17						
	Manganese	mg/ka	EPA 6020	1,390		1.3	620		621			620		692		618		618				379			1,100						
	Nickel	mg/ka	EPA 6020	44.7			8.01		20.3			23.5		26.7		28.5		28.5				26.8			48.6						
	Selenium	mg/ka	EPA 6020	0.222	J		0.1280	J		0.127	J		0.0571	J		0.167	J	0.196	J			0.0253	J		2.0						
	Silver	mg/ka	EPA 6020	0.571	J		0.134	J		0.265	J		0.178	J		0.453	J	0.56	J			0.0696	J		5						
Zinc	mg/ka	EPA 6020	2,150		4.7	110		402			111	J		J		162		162			66.2			459							
PCBs	Aroclor 1016	µg/ka	EPA 8082	8.44	U		1.88	U		2.07	U		2.18	U		2.37	U		2.36	U		2.16	U		530						
	Aroclor 1221	µg/ka	EPA 8082	16.8	U		3.75	U		4.13	U		4.34	U		4.73	U		4.70	U		4.31	U		--						
	Aroclor 1232	µg/ka	EPA 8082	8.44	U		1.88	U		2.07	U		2.18	U		2.37	U		2.36	U		2.16	U		--						
	Aroclor 1242	µg/ka	EPA 8082	8.44	U		1.88	U		2.07	U		2.18	U		2.37	U		2.36	U		2.16	U		--						
	Aroclor 1248	µg/ka	EPA 8082	8.44	U		1.88	U		2.07	U		2.18	U		2.37	U		2.36	U		2.16	U		1,500						
	Aroclor 1254	µg/ka	EPA 8082	8.44	U		1.88	U		2.07	U		8.00	J		26.9	J		2.36	U		2.16	U		300						
	Aroclor 1260	µg/ka	EPA 8082	46.1	U		6.79	U		9.75	U		2.18	U		2.37	U		2.36	U		2.16	U		200						
	Aroclor 1262	µg/ka	EPA 8082	8.44	U		1.88	U		2.07	U		2.18	U		9.46	J		6.77	J		2.16	U		--						
	Aroclor 1268	µg/ka	EPA 8082	8.44	U		1.88	U		2.07	U		2.18	U		2.37	U		2.36	U		2.16	U		--						
	Total PCBs	µg/ka	EPA 8082	46.1		118.2	6.79		17.4		9.75	25.0	8.00	J	20.5	36.4	J	93.3	6.77	J	17.4	21.6	U	55.4	0.39						
VOCs	1,1,1,2-Tetrachloroethane	µg/ka	EPA 8260B	11.7	U		10.2	U		11.3	U		12.0	U		12.9	U		13.1	U		11.8	U		--						
	1,1,1-Trichloroethane	µg/ka	EPA 8260B	6.33	U		5.52	U		6.10	U		6.47	U		6.97	U		7.10	U		6.36	U		--						
	1,1,2,2-Tetrachloroethane	µg/ka	EPA 8260B	14.3	U		12.5	U		13.8	U		14.6	U		15.8	U		16.1	U		14.4	U		--						
	1,1,2-Trichloroethane	µg/ka	EPA 8260B	8.53	U		7.44	U		8.22	U		8.72	U		9.39	U		9.56	U		8.57	U		--						
	1,1-Dichloroethane	µg/ka	EPA 8260B	8.44	U		7.36	U		8.14	U		8.63	U		9.29	U		9.46	U		8.48	U		--						
	1,1-Dichloroethene	µg/ka	EPA 8260B	15.1	U		13.1	U		14.5	U		15.4	U		16.6	U		16.9	U		15.1	U		--						
	1,1-Dichloropropane	µg/ka	EPA 8260B	9.93	U		8.66	U		9.58	U		10.2	U		10.9	U		11.1	U		9.99	U		--						
	1,2,3-Trichlorobenzene	µg/ka	EPA 8260B	11.8	U		10.3	U		11.4	U		12.0	U		13.0	U		13.2	U		11.8	U		--						
	1,2,3-Trichloropropane	µg/ka	EPA 8260B	8.12	U		7.09	U		7.83	U		8.31	U		8.95	U		9.11	U		8.17	U		--						
	1,2,4-Trichlorobenzene	µg/ka	EPA 8260B	17.5	U		15.2	U		16.8	U		17.9	U		19.2	U		19.6	U		17.5	U		9,200						
	1,2,4-Trimethylbenzene	µg/ka	EPA 8260B	18.6	U		16.2	U		17.9	U		19.0	U		20.5	U		20.8	U		18.7	U		--						
	1,2-Dibromo-3-chloropropane	µg/ka	EPA 8260B	51.9	U		45.2	U		50.0	U		53.0	U		57.1	U		58.1	U		52.1	U		--						
	1,2-Dibromoethane	µg/ka	EPA 8260B	13.1	U		11.4	U		12.6	U		13.4	U		14.4	U		14.6	U		13.1	U		--						
	1,2-Dichlorobenzene	µg/ka	EPA 8260B	9.78	U		8.53	U		9.43	U		10.0	U		10.8	U		11.0	U		9.83	U		1,700						
	1,2-Dichloroethane	µg/ka	EPA 8260B	9.52	U		8.30	U		9.18	U		9.73	U		10.5	U		10.7	U		9.57	U		--						
	1,2-Dichloropropane	µg/ka	EPA 8260B	8.44	U		7.36	U		8.14	U		8.63	U		9.29	U		9.46	U		8.48	U		--						
	1,3,5-Trimethylbenzene	µg/ka	EPA 8260B	10.3	U		8.98	U		9.93	U		10.5	U		11.3	U		11.5	U		10.4	U		--						
	1,3-Dichlorobenzene	µg/ka	EPA 8260B	7.85	U		6.84	U		7.57	U		8.03	U		8.64	U		8.80	U		7.89	U		300						
	1,3-Dichloropropane	µg/ka	EPA 8260B	8.35	U		7.28	U		8.05	U		8.54	U		9.19	U		9.36	U		8.4	U		--						
	1,4-Dichlorobenzene	µg/ka	EPA 8260B	10.6	U		9.26	U		10.2	U		10.9	U		11.7	U		11.9	U		10.7	U		300						
	2,2-Dichloropropane	µg/ka	EPA 8260B	7.90	U		6.89	U		7.62	U		8.08	U		8.70	U		8.86	U		7.94	U		--						
	2-Butanone	µg/ka	EPA 8260B	31.9	U		27.8	U		30.8	U		32.6	U		35.1	U		35.8	U		32.1	U		--						
	2-Chlorotoluene	µg/ka	EPA 8260B	7.46	U		6.51	U		7.19	U		7.63	U		8.21	U		8.36	U		7.5	U		--						
2-Hexanone	µg/ka	EPA 8260B	35.5	U		31.0	U		34.3	U		36.3	U		39.1	U		39.8	U		35.7	U		--							
4-Chlorotoluene	µg/ka	EPA 8260B	5.45	U		4.75	U		5.26	U		5.57	U		6.00	U		6.11	U		5.48	U		--							
4-Methyl-2-pentanone	µg/ka	EPA 8260B	24.0	U		20.9	U		23.1	U		24.5	U		26.4	U		26.9	U		24.1	U		--							
Acetone	µg/ka	EPA 8260B	755	U		658	U		728	U		772	U		831	U		846	U		759	U		--							

Please refer to notes at end of table.

Table 8
 Vector 2.6 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.6																		JSCS Screening Levels			
				090810-2-2.6-00-10-WS			090810-2-2.6-5-01-FS			090810-2-2.6-15-03-FS			090810-2-2.6-25-05-FS			090810-2-2.6-25-06-FS			090810-2-2.6-30-07-FS				090810-2-2.6-40-09-FS		
				Date			9/8/2010			9/8/2010			9/8/2010			9/8/2010			9/8/2010				9/8/2010		
				Depth (Feet Below Ground Surface)			0			5 - 10			15 - 20			25 - 30			25 - 30				30 - 35		
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
VOCs (continued)	Benzene	µg/kg	EPA 8260B	5.31	U		4.63	U		5.12	U		5.43	U		5.85	U		5.96	U		5.34	U		--
	Bromobenzene	µg/kg	EPA 8260B	15.7	U		13.7	U		15.1	U		16.1	U		17.3	U		17.6	U		15.8	U		--
	Bromochloromethane	µg/kg	EPA 8260B	12.2	U		10.7	U		11.8	U		12.5	U		13.5	U		13.7	U		12.3	U		--
	Bromodichloromethane	µg/kg	EPA 8260B	12.8	U		11.2	U		12.4	U		13.1	U		14.1	U		14.4	U		12.9	U		--
	Bromoform	µg/kg	EPA 8260B	11.6	U		10.1	U		11.1	U		11.8	U		12.7	U		13.0	U		11.6	U		--
	Bromomethane	µg/kg	EPA 8260B	10.1	U		8.82	U		9.75	U		10.3	U		11.1	U		11.3	U		10.2	U		--
	Carbon disulfide	µg/kg	EPA 8260B	9.03	U		7.87	U		8.71	U		9.23	U		9.94	U		10.1	U		9.08	U		--
	Carbon tetrachloride	µg/kg	EPA 8260B	13.8	U		12.0	U		13.3	U		14.1	U		15.2	U		15.5	U		13.9	U		--
	Chlorobenzene	µg/kg	EPA 8260B	3.86	U		3.36	U		3.72	U		3.94	U		4.24	U		4.32	U		3.88	U		--
	Chloroethane	µg/kg	EPA 8260B	23.2	U		20.3	U		22.4	U		23.8	U		25.6	U		26.0	U		23.4	U		--
	Chloroform	µg/kg	EPA 8260B	6.83	U		5.96	U		6.59	U		6.99	U		7.52	U		7.66	U		6.87	U		--
	Chloromethane	µg/kg	EPA 8260B	8.78	U		7.65	U		8.46	U		8.98	U		9.66	U		9.84	U		8.82	U		--
	cis-1,2-Dichloroethene	µg/kg	EPA 8260B	13.6	U		11.8	U		13.1	U		13.9	U		14.9	U		15.2	U		13.6	U		--
	cis-1,3-Dichloropropene	µg/kg	EPA 8260B	5.78	U		5.04	U		5.57	U		5.91	U		6.36	U		6.48	U		5.81	U		--
	Dibromochloromethane	µg/kg	EPA 8260B	9.32	U		8.13	U		8.98	U		9.53	U		10.3	U		10.4	U		9.37	U		--
	Dibromomethane	µg/kg	EPA 8260B	5.96	U		5.20	U		5.75	U		6.10	U		6.57	U		6.69	U		6.00	U		--
	Dichlorodifluoromethane	µg/kg	EPA 8260B	9.03	U		7.87	U		8.71	U		9.23	U		9.94	U		10.1	U		9.08	U		--
	Ethylbenzene	µg/kg	EPA 8260B	3.55	U		3.10	U		3.43	U		3.63	U		3.91	U		3.98	U		3.57	U		--
	Hexachlorobutadiene	µg/kg	EPA 8260B	11.2	U		9.74	U		10.8	U		11.4	U		12.3	U		12.5	U		11.2	U		--
	Isopropylbenzene	µg/kg	EPA 8260B	9.32	U		8.13	U		8.98	U		9.53	U		10.3	U		10.4	U		9.37	U		--
	m,p-Xylene	µg/kg	EPA 8260B	22.4	U		19.5	U		21.6	U		22.9	U		24.6	U		25.1	U		22.5	U		--
	Methyl tert-butyl ether	µg/kg	EPA 8260B	6.83	U		5.96	U		6.59	U		6.99	U		7.52	U		7.66	U		6.87	U		--
	Methylene chloride	µg/kg	EPA 8260B	20.1	J		13.1	J		13.3	J		15.4	J		12.4	J		15.5	J		20.2	J		--
	Naphthalene	µg/kg	EPA 8260B	9.67	U		8.43	U		9.32	U		9.89	U		10.6	U		10.8	U		9.72	U		--
	n-Butylbenzene	µg/kg	EPA 8260B	8.04	U		7.01	U		7.75	U		8.22	U		8.85	U		9.01	U		8.08	U		--
	n-Propylbenzene	µg/kg	EPA 8260B	8.83	U		7.70	U		8.51	U		9.03	U		9.72	U		9.90	U		8.88	U		--
	o-Xylene	µg/kg	EPA 8260B	8.12	U		7.09	U		7.83	U		8.31	U		8.95	U		9.11	U		8.17	U		--
	p-Isopropyltoluene	µg/kg	EPA 8260B	12.2	U		10.6	U		11.7	U		12.4	U		13.4	U		13.6	U		12.2	U		--
	sec-Butylbenzene	µg/kg	EPA 8260B	6.39	U		5.57	U		6.16	U		6.54	U		7.04	U		7.17	U		6.43	U		--
	Styrene	µg/kg	EPA 8260B	3.94	U		3.44	U		3.80	U		4.03	U		4.34	U		4.42	U		3.96	U		--
tert-Butylbenzene	µg/kg	EPA 8260B	12.3	U		10.7	U		11.8	U		12.5	U		13.5	U		13.8	U		12.3	U		--	
Tetrachloroethene	µg/kg	EPA 8260B	18.1	U		15.8	U		17.4	U		18.5	U		19.9	U		20.3	U		18.2	U		500	
Toluene	µg/kg	EPA 8260B	4.40	U		3.83	U		4.24	U		4.24	J		4.84	U		4.93	U		4.42	U		--	
trans-1,2-Dichloroethene	µg/kg	EPA 8260B	7.36	U		6.42	U		7.10	U		7.53	U		8.10	U		8.25	U		7.4	U		--	
trans-1,3-Dichloropropene	µg/kg	EPA 8260B	7.36	U		6.42	U		7.10	U		7.53	U		8.10	U		8.25	U		7.4	U		--	
Trichloroethene	µg/kg	EPA 8260B	9.12	U		7.95	U		8.79	U		9.32	U		10.0	U		10.2	U		9.17	U		2100	
Trichlorofluoromethane	µg/kg	EPA 8260B	39.1	U		34.1	U		37.7	U		39.9	U		43.0	U		43.8	U		39.3	U		--	
Vinyl chloride	µg/kg	EPA 8260B	9.39	U		8.19	U		9.06	U		9.61	U		10.3	U		10.5	U		9.44	U		--	
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	20.9	U		3.70	U		4.08	U		4.28	U		111			25.7			4.76	J		200
	Acenaphthene	µg/kg	EPA 8270M	20.9	U		3.70	U		4.08	U		4.28	U		50.1			15.0	J		9.46	J		300
	Acenaphthylene	µg/kg	EPA 8270M	28.1	J		3.70	U		4.08	U		4.28	U		21.2	J		31.5			14.7	J		200
	Anthracene	µg/kg	EPA 8270M	20.9	U		3.70	U		5.60	J		8.20	J		62.8			32.2			26.5			845
	Benzo(a)anthracene	µg/kg	EPA 8270M	50.9	J		4.60	J		12.0	J		39.2	J		71.8	J		66.8			138			1050
	Benzo(a)pyrene	µg/kg	EPA 8270M	58.9	J		6.34	J		15.7	J		52.5	J		93.9	J		102			128			1450
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	115			6.75	J		21.4			53.3	J		82.5	J		85.0			83.1			--
	Benzo(ghi)perylene	µg/kg	EPA 8270M	85.9			6.74	J		18.8			45.4	J		73.8	J		109			61.8			300
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	71.9	J		5.02	J		20.6			47.0			58.3			75.4			96.2			13000
Chrysene	µg/kg	EPA 8270M	124			7.30	J		16.0	J		58.1	J		133	J		105			121			1290	

Please refer to notes at end of table.

Table 8
 Vector 2.6 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.6																		JSCS Screening Levels			
				090810-2-2.6-00-10-WS			090810-2-2.6-5-01-FS			090810-2-2.6-15-03-FS			090810-2-2.6-25-05-FS			090810-2-2.6-25-06-FS			090810-2-2.6-30-07-FS				090810-2-2.6-40-09-FS		
				Date			9/8/2010			9/8/2010			9/8/2010			9/8/2010			9/8/2010				9/8/2010		
				Depth (Feet Below Ground Surface)			0			5 - 10			15 - 20			25 - 30			25 - 30				30 - 35		
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
PAHs (continued)	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	20.9	U		3.70	U		4.49	J		8.71	J		16.3	J		12.6	J		17.5			1300
	Fluoranthene	µg/kg	EPA 8270M	135			7.34	J		23.3	J		73.6	J		152	J		261	J		158			2230
	Fluorene	µg/kg	EPA 8270M	20.9	U		3.70	U		4.08	U		4.28	U		51.1			20.6			4.27	U		536
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	61.0	J		4.23	J		21.8			35.5			48.1			73.3			59.5			100
	Naphthalene	µg/kg	EPA 8270M	23.8	J		3.70	U		4.08	U		7.30	J		78.0			94.5			17.7			561
	Phenanthrene	µg/kg	EPA 8270M	87.5			4.93	J		19.8			44.7	J		275	J		201			59.1			1170
	Pyrene	µg/kg	EPA 8270M	140			9.39	J		27.4			88.9	J		233	J		327			195			1520
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	452		1.4	15.0	U		28.1	J		744		2.3	38.1	U		26.8	J		17.3	U		330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	84.9	U		15.0	U		16.6	U		17.4	U		38.1	U		18.8	U		17.3	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	84.9	U		15.0	U		16.6	U		17.4	U		38.1	U		18.8	U		17.3	U		600
	Dimethyl phthalate	µg/kg	EPA 8270M	84.9	U		15.0	U		16.6	U		17.4	U		38.1	U		18.8	U		17.3	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	313		5.2	15.0	U		16.6	U		17.4	U		38.1	U		18.8	U		17.3	U		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	84.9	U		15.0	U		16.6	U		17.4	U		38.1	U		37.7	U		17.3	U		--
Organotins	Dibutyltin	µg/kg	PSEP	0.52	U		29			0.55	U		0.58	U		0.58	U		0.60	U		0.52	U		--
	Monobutyltin	µg/kg	PSEP	0.49	U		25			0.52	U		0.55	U		0.55	U		0.57	U		0.49	U		--
	Tetra-n-butyltin	µg/kg	PSEP	1.5	U		1.3	U		1.6	U		1.7	U		1.7	U		1.8	U		1.5	U		--
	Tributyltin	µg/kg	PSEP	1.1	U		3.8		1.7	1.2	U		1.2	U		1.2	U		1.3	U		1.1	U		2.3
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	69.0			17.8			15.5	J		18.9	J		65.7	J		71.3			6.76	J		--
	Heavy Oil	mg/kg	NWTPH-Dx	514			79.6			82.4			152	J		382	J		154			5.72	J		--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U= Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation

Table 9
 Vector 2.7 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.7																			JSCS Screening Levels			
				092210-2-2.7- Surface-01-WS			092210-2-2.7- 10-03-FS			092210-2-2.7- 25-06-FS			092210-2-2.7- 25-07-Dup			092210-2-2.7- 30-08-FS			092210-2-2.7- 35-09-FS			092210-2-2.7-40- 10-FS				
				Date			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010				
				Depth (Feet Below Ground Surface)			0			5 - 10			20 - 25			20 - 25			25 - 30			30 - 35			35 - 40	
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
Inorganics	Mercury	mg/ka	EPA 7471A	0.0137	J		0.152		2.2	0.171		2.4	0.165		2.4	0.161		2.3	0.042	J		0.0343	J		0.07	
	Arsenic	mg/ka	EPA 6020	11.3	J	1.6	112		16.0	6.30	J		10.9	J	1.6	11.8		1.7	4.71	J		3.67	J		7	
	Barium	mg/ka	EPA 6020	205			142			198	J		237	J		202			154			84.8			--	
	Chromium	mg/ka	EPA 6020	51.0			99.8			34.3	J		93.0	J		113		1.0	33.6			19.3			111	
	Copper	mg/ka	EPA 6020	843		5.7	282		1.9	88.4	J		124	J		107			34.0			15.6			149	
	Lead	mg/ka	EPA 6020	33.6		2.0	386		22.7	515	J	30.3	208	J	12.2	427		25.1	8.53			4.83			17	
	Manganese	mg/ka	EPA 6020	1,470		1.3	840			1,020	J		751	J		1,200		1.1	381			271			1,100	
	Nickel	mg/ka	EPA 6020	39.9			22.3			33.2			60.6		1.2	46.6			33.2			20.0			48.6	
	Selenium	mg/ka	EPA 6020	0.269	J		0.2550	J		0.131	J		0.332	J		0.316	J		0.139	J		0.123	J		2.0	
	Silver	mg/ka	EPA 6020	0.365	J		0.544	J		0.340	J		0.458	J		1.82			0.16	J		0.110	J		5	
Zinc	mg/ka	EPA 6020	3,970		8.6	1,210		2.6	730	J	1.6	406	J		298			69.1			68.5			459		
PCBs	Aroclor 1016	µg/ka	EPA 8082	1.79	U		3.79	U		39.5	U		10.1	U		234	U		2.31	U		2.18	U		530	
	Aroclor 1221	µg/ka	EPA 8082	3.56	U		7.55	U		78.70	U		20.1	U		467	U		4.60	U		4.35	U		--	
	Aroclor 1232	µg/ka	EPA 8082	1.79	U		3.79	U		39.5	U		10.1	U		234	U		2.31	U		2.18	U		--	
	Aroclor 1242	µg/ka	EPA 8082	1.79	U		3.79	U		864	J		10.1	U		234	U		2.31	U		2.18	U		--	
	Aroclor 1248	µg/ka	EPA 8082	1.79	U		3.79	U		39.5	U		136	J		3,230	J	2.2	6.28			2.18	U		1,500	
	Aroclor 1254	µg/ka	EPA 8082	19.0			18.4			39.5	U		10.1	U		234	U		2.31	U		2.18	U		300	
	Aroclor 1260	µg/ka	EPA 8082	1.79	U		3.79	U		39.5	U		10.1	U		234	U	1.2	2.31	U		2.18	U		200	
	Aroclor 1262	µg/ka	EPA 8082	8.28			29.2			39.5	U		10.1	U		234	U		2.31	U		2.18	U		--	
	Aroclor 1268	µg/ka	EPA 8082	1.79	U		3.79	U		39.5	U		10.1	U		234	U		2.31	U		2.18	U		--	
	Total PCBs	µg/ka	EPA 8082	27.3		70	47.6		122	864	J	2,215	136	J	348.7	3,230	J	8,282	6.28		16	21.8	U	56	0.39	
SVOCs	1,2,4-Trichlorobenzene	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	1,2-Dichlorobenzene	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		1,700	
	1,3-Dichlorobenzene	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		300	
	1,4-Dichlorobenzene	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		300	
	2,4,5-Trichlorophenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	2,4,6-Trichlorophenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	2,4-Dichlorophenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	2,4-Dimethylphenol	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	2,4-Dinitrophenol	µg/ka	EPA 8270C	8,460	U		4,540	U		2,380	U		2,400	U		55,300	U		2,750	U		2,600	U		--	
	2,4-Dinitrotoluene	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	2,6-Dinitrotoluene	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	2-Chloronaphthalene	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	2-Chlorophenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	2-Methylphenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	2-Nitroaniline	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	2-Nitrophenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	3,3'-Dichlorobenzidine	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	3,4-Methylphenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	3-Nitroaniline	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	4,6-Dinitro-2-methylphenol	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	4-Bromophenyl phenyl ether	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	4-Chloro-3-methylphenol	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	4-Chloroaniline	µg/ka	EPA 8270C	698	U		374	U		196	U		198	U		4,570	U		227	U		215	U		--	
	4-Chlorophenyl phenyl ether	µg/ka	EPA 8270C	423	U		227	U		119	U		120	U		2,770	U		138	U		130	U		--	
	4-Nitroaniline	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	4-Nitrophenol	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	Benzoic Acid	µg/ka	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	Benzyl Alcohol	µg/ka	EPA 8270C	4,230	U		2,270	U		1,190	U		1,200	U		27,700	U		1,380	U		1,300	U		--	
Bis(2-chloroethoxy)methane	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--		
Bis(2-chloroethyl)ether	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--		
Bis(2-chloroisopropyl)ether	µg/ka	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--		

Please refer to notes at end of table.

Table 9
 Vector 2.7 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.7																		JSCS Screening Levels				
				092210-2-2.7- Surface-01-WS			092210-2-2.7- 10-03-FS			092210-2-2.7- 25-06-FS			092210-2-2.7- 25-07-Dup			092210-2-2.7- 30-08-FS			092210-2-2.7- 35-09-FS				092210-2-2.7-40- 10-FS			
				Date			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010				9/22/2010			
				Depth (Feet Below Ground Surface)			0			5 - 10			20 - 25			20 - 25			25 - 30				30 - 35			35 - 40
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
SVOCs (continued)	Dibenzofuran	µg/kg	EPA 8270C	296	U		732	J		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	Hexachlorobenzene	µg/kg	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		19	
	Hexachlorobutadiene	µg/kg	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		600	
	Hexachlorocyclopentadiene	µg/kg	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		400	
	Hexachloroethane	µg/kg	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		--	
	Isophorone	µg/kg	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	Nitrobenzene	µg/kg	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	N-Nitrosodi-n-propylamine	µg/kg	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	N-Nitrosodiphenylamine	µg/kg	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		--	
	Pentachlorophenol	µg/kg	EPA 8270C	2,120	U		1,130	U		595	U		600	U		13,800	U		688	U		650	U		250	
Phenol	µg/kg	EPA 8270C	296	U		159	U		83.3	U		84.0	U		1,940	U		96.3	U		91.0	U		50		
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	7.05	U		1,570		7.9	72.7			29.6	J		108			4.52	U		13.3	J		200	
	Acenaphthene	µg/kg	EPA 8270M	7.05	U		3,090		10.3	40.7			13.4	J		175			4.52	U		12.5	J		300	
	Acenaphthylene	µg/kg	EPA 8270M	19.2	J		3,410		17.1	12.3	J		13.8	J		75.2	U		8.91	J		16.5	J		200	
	Anthracene	µg/kg	EPA 8270M	43.3			8,670		10.3	105	J		187	J		217			14.5	J		19.4			845	
	Benzo(a)anthracene	µg/kg	EPA 8270M	91.6			12,500		11.9	569	J		81.6	J		190			53.0			113			1050	
	Benzo(a)pyrene	µg/kg	EPA 8270M	71.8			10,300		7.1	930	J		91.4	J		224			45.8			150			1450	
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	181			7,870			446	J		64.7	J		147			27.9			90.9			--	
	Benzo(ghi)perylene	µg/kg	EPA 8270M	82.3			5,340		17.8	932	J	3.1	66.3	J		157			20.2			118			300	
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	111			8,800			246	J		50.6	J		91.3			33.0			95.3			13000	
	Chrysene	µg/kg	EPA 8270M	240			12,000		9.3	903	J		206	J		299			55.6			117			1290	
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	28.5	J		1,710		1.3	129			15.7	J		33.9	J		5.46	J		15.1	J		1300	
	Fluoranthene	µg/kg	EPA 8270M	236			33,500		15.0	359	J		118	J		266			71.1			216			2230	
	Fluorene	µg/kg	EPA 8270M	11.8	J		5,850		10.9	63.3			50.8			233			4.52	U		5.48	J		536	
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	64.4			5,330		53.3	258	J	2.6	43.6	J		87.8			18.9			85.6			100	
	Naphthalene	µg/kg	EPA 8270M	11.6	J		2,320		4.1	154	J		52.6	J		194			8.16	J		21.9			561	
	Phenanthrene	µg/kg	EPA 8270M	81.1			37,300		31.9	395	J		90.0	J		542			22.3			92.1			1170	
Pyrene	µg/kg	EPA 8270M	260			26,500		17.4	1,060	J		215	J		619			86.2			296			1520		
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	551		1.7	151	U		31.7	U		15.9	U		126	J		18.4	U		17.4	U		330	
	Butyl benzyl phthalate	µg/kg	EPA 8270M	30.3	J		151	U		31.7	U		15.9	U		94.0	U		18.4	U		17.4	U		--	
	Diethyl phthalate	µg/kg	EPA 8270M	35.3	J		75.4	U		31.7	U		15.9	U		94.0	U		18.4	U		17.4	U		600	
	Dimethyl phthalate	µg/kg	EPA 8270M	28.6	U		75.4	U		31.7	U		15.9	U		94.0	U		18.4	U		17.4	U		--	
	Di-n-butyl phthalate	µg/kg	EPA 8270M	1,180		19.7	75.4	U		63.4	U		15.9	U		94.0	U		18.4	U		17.4	U		60	
	Di-n-octyl phthalate	µg/kg	EPA 8270M	28.6	U		75.4	U		31.7	U		15.9	U		94.0	U		18.4	U		17.4	U		--	
Organotins	Dibutyltin	µg/kg	PSEP	15			0.43	U		0.50	U		0.50	U		0.49	U		0.54	U		0.51	U		--	
	Monobutyltin	µg/kg	PSEP	18			0.41	U		0.48	U		0.48	U		0.46	U		0.52	U		0.48	U		--	
	Tetra-n-butyltin	µg/kg	PSEP	1.3	U		1.3	U		1.50	U		1.5	U		1.4	U		1.6	U		1.5	U		--	
	Tributyltin	µg/kg	PSEP	14		6.1	0.92	U		1.10	U		1.1	U		1.0	U		1.2	U		1.1	U		2.3	

Please refer to notes at end of table.

Table 9
 Vector 2.7 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.7																		JSCS Screening Levels			
				092210-2-2.7- Surface-01-WS			092210-2-2.7- 10-03-FS			092210-2-2.7- 25-06-FS			092210-2-2.7- 25-07-Dup			092210-2-2.7- 30-08-FS			092210-2-2.7- 35-09-FS				092210-2-2.7-40- 10-FS		
				Date			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010				9/22/2010		
Depth (Feet Below Ground Surface)			0			5 - 10			20 - 25			20 - 25			25 - 30			30 - 35			35 - 40				
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Organochlorine Pesticides	4,4'-DDD	µg/kg	EPA 8081A	0.709	UJ	2.1	--		--			--			--			--			--			0.33	
	4,4'-DDE	µg/kg	EPA 8081A	1.44	UJ	4.4	--		--			--			--			--			--			0.33	
	4,4'-DDT	µg/kg	EPA 8081A	1.77	UJ	5.4	--		--			--			--			--			--			0.33	
	Aldrin	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			40	
	alpha-BHC	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			--	
	alpha-Chlordane	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			--	
	beta-BHC	µg/kg	EPA 8081A	1.44	UJ		--		--			--			--			--			--			--	
	Chlordane	µg/kg	EPA 8081A	16.1	UJ	43.5	--		--			--			--			--			--			0.37	
	delta-BHC	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			--	
	Dieldrin	µg/kg	EPA 8081A	0.709	UJ	87.5	--		--			--			--			--			--			0.0081	
	Endosulfan I	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			--	
	Endosulfan II	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			--	
	Endosulfan sulfate	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			--	
	Endrin	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			207	
	Endrin aldehyde	µg/kg	EPA 8081A	1.44	UJ		--		--			--			--			--			--			--	
	Endrin ketone	µg/kg	EPA 8081A	3.60	UJ		--		--			--			--			--			--			--	
	gamma-BHC (Lindane)	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			4.99	
	gamma-Chlordane	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			--	
Heptachlor	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			10		
Heptachlor epoxide	µg/kg	EPA 8081A	0.709	UJ		--		--			--			--			--			--			16		
Methoxychlor	µg/kg	EPA 8081A	1.77	UJ		--		--			--			--			--			--			--		
Toxaphene	µg/kg	EPA 8081A	215	UJ		--		--			--			--			--			--			--		
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	88.2			35.4			68.2	J		44.6	J		2,280			3.04	J		3.92	J	--	
	Heavy Oil	mg/kg	NWTPH-Dx	719			138			425	J		123	J		5,090			10.1	J		6.91	J	--	

- Notes:**
- = Not applicable/not analyzed.
 - mg/kg = Milligrams per kilogram.
 - µg/kg = Micrograms per kilogram.
 - J = The result is an estimated quantity.
 - U = Undetected at the method detection limit shown.
 - UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
 - JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
 - SLV = Screening Level Value.
 - Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 10
 Vector 2.8 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.8																									JSCS Screening Levels																								
				092110-2-2.8- Surface-02-WS			092110-2-2.8-1.5-01-FS			092110-2-2.8-5-03-FS			092110-2-2.8-10-04-FS			092110-2-2.8-15-05-FS			092110-2-2.8-20-06-FS			102610-2-2.8-25-01-FS			102610-2-2.8-40-04-FS			102610-2-2.8-40-07DUP			102610-2-2.8-45-05-FS																						
				Date: 9/21/2010			Date: 9/21/2010			Date: 9/21/2010			Date: 9/21/2010			Date: 9/21/2010			Date: 9/21/2010			Date: 10/26/2010			Date: 10/26/2010			Date: 10/26/2010			Date: 10/26/2010																						
				Depth (Feet Below Ground Surface): 0			Depth (Feet Below Ground Surface): 0 - 1.5			Depth (Feet Below Ground Surface): 5 - 10			Depth (Feet Below Ground Surface): 10 - 15			Depth (Feet Below Ground Surface): 15 - 20			Depth (Feet Below Ground Surface): 20 - 25			Depth (Feet Below Ground Surface): 20 - 25			Depth (Feet Below Ground Surface): 35 - 40			Depth (Feet Below Ground Surface): 35 - 40			Depth (Feet Below Ground Surface): 40 - 45																						
Result			Flag			Exceedance			Result			Flag			Exceedance			Result			Flag			Exceedance			Result			Flag			Exceedance			Result			Flag			Exceedance			Result			Flag			Exceedance		
Inorganics	Mercury	mg/kg	EPA 7471A	0.105		1.5	0.00940	J		0.00450	U		0.00290	U		0.00540	U		0.222		3.2	0.0942		1.3	0.0622	J		0.0545		0.0366	J		0.07																				
	Arsenic	mg/kg	EPA 6020	124		17.7	1.88	J		1.13	U		0.916	U	1.6	11.1	U		9.46		1.4	4.98			4.97	J		3.69	J		0.0366	J	0.07																				
	Barium	mg/kg	EPA 6020	561			114			102			74.1			243			175			145			144			149		144																							
	Chromium	mg/kg	EPA 6020	135		1.2	7.5			8.49			31.5			25.6			31.3			25.6			30.2			30.2		28.0																							
	Copper	mg/kg	EPA 6020	2,080		14.0	30.2			13.7			835		5.6	30.9			47.5			47.5			30.3			27.7		23.7																							
	Lead	mg/kg	EPA 6020	512		30.1	37.0			6.61			4.19		2.3	39.1			69.9		4.1	24.4		1.4	10.1			7.60		4.47																							
	Manganese	mg/kg	EPA 6020	2,850		2.6	1,140		1.0	748			535		1.6	1,770			654			634			552			461		1,190			1.100																				
	Nickel	mg/kg	EPA 6020	50.7		1.0	6.55			4.36			2.31			17.0			20.4			23.4			24.5			24.7		20.9				48.6																			
	Selenium	mg/kg	EPA 6020	0.632	J		0.0786	J		0.0714	J		0.0268	J		0.208	J		0.0767	J		0.117	J		0.201	J		0.109	J	0.142	J			2.0																			
	Silver	mg/kg	EPA 6020	1.23			0.14	J		0.159	J		0.123	J		0.515	J		0.179	J		0.209	J		0.223	J		0.129	J	0.11	J			5																			
Zinc	mg/kg	EPA 6020	7,830		17.1	92.5			69.8			56.4			168			113			96.3			70.8			60.1		52.6				459																				
PCBs	Aroclor 1016	µg/kg	EPA 8082	21.5	U		1.87	U		1.82	U		1.79	U		1.82	U		2.12	U		8.75	U		2.12	U		2.26	U	2.22	U			530																			
	Aroclor 1221	µg/kg	EPA 8082	42.9	U		3.73	U		3.63	U		3.56	U		3.63	U		4.22	U		17.5	U		4.79	U		4.51	U	4.42	U			--																			
	Aroclor 1232	µg/kg	EPA 8082	21.5	U		1.87	U		1.82	U		1.79	U		1.82	U		2.12	U		8.75	U		2.40	U		2.26	U	2.22	U			--																			
	Aroclor 1242	µg/kg	EPA 8082	21.5	U		1.87	U		1.82	U		1.79	U		1.82	U		2.12	U		8.75	U		2.40	U		2.26	U	2.22	U			--																			
	Aroclor 1248	µg/kg	EPA 8082	21.5	U		13.1			1.82	U		1.79	U		1.82	U		2.12	U		8.75	U		2.40	U		2.26	U	2.22	U			1,500																			
	Aroclor 1254	µg/kg	EPA 8082	21.5	U		1.87	U		1.82	U		1.79	U		1.82	U		2.12	U		74.0			2.40	U		2.26	U	2.22	U			300																			
	Aroclor 1260	µg/kg	EPA 8082	21.5	U		6.96			1.82	U		1.79	U		1.82	U		7.81	U		8.75	U		2.40	U		2.26	U	2.22	U			200																			
	Aroclor 1262	µg/kg	EPA 8082	63.4	U		1.87	U		1.82	U		1.79	U		1.82	U		2.12	U		49.9			2.40	U		2.26	U	2.22	U			--																			
	Aroclor 1268	µg/kg	EPA 8082	21.5	U		1.87	U		1.82	U		1.79	U		1.82	U		2.12	U		8.75	U		2.40	U		2.26	U	2.22	U				--																		
	Total PCBs	µg/kg	EPA 8082	63.4		162.6	20.1		51.5	18.2			17.9			18.2			7.81	J	20.0	124		317.9	24.0		22.6	U	22.2	U	56.9			0.39																			
SVOCS	1,2,4-Trichlorobenzene	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			--																			
	1,2-Dichlorobenzene	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			1,700																			
	1,3-Dichlorobenzene	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			300																			
	1,4-Dichlorobenzene	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			300																			
	2,4,5-Trichlorophenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	2,4,6-Trichlorophenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	2,4-Dichlorophenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	2,4-Dimethylphenol	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			--																			
	2,4-Dinitrophenol	µg/kg	EPA 8270C	10,300	U		2,220	U		2,190	U		2,120	U		2,170	U		2,540	U		2,620	U		2,840	U		2,670	U	2,650	U			--																			
	2,4-Dinitrotoluene	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			--																			
	2,6-Dinitrotoluene	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			--																			
	2-Chloronaphthalene	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	2-Chlorophenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	2-Methylphenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	2-Nitroaniline	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	2-Nitrophenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	3,3'-Dichlorobenzidine	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			--																			
	3,4-Methylphenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	3-Nitroaniline	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			--																			
	4,6-Dinitro-2-methylphenol	µg/kg	EPA 8270C	2,580	U		555	U		548	U		531	U		542	U		635	U		654	U		710	U		668	U	662	U			--																			
	4-Bromophenyl phenyl ether	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U		75.9	U		89.0	U		91.6	U		99.4	U		93.5	U	92.7	U			--																			
	4-Chloro-3-methylphenol	µg/kg	EPA 8270C	361	U		77.7	U		76.7	U		74.3	U	</																																						

Table 10
 Vector 2.8 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.8																											JSCS Screening Levels				
				092110-2-2.8- Surface-02-WS			092110-2-2.8-1.5-01-FS			092110-2-2.8-5-03-FS			092110-2-2.8-10-04-FS			092110-2-2.8-15-05-FS			092110-2-2.8-20-06-FS			102610-2-2.8-25-01-FS			102610-2-2.8-40-04-FS			102610-2-2.8-40-07-DUP				102610-2-2.8-45-05-FS			
				Date			9/21/2010			9/21/2010			9/21/2010			9/21/2010			9/21/2010			10/26/2010			10/26/2010			10/26/2010				10/26/2010			
				Depth (Feet Below Ground Surface)			0			0 - 1.5			5 - 10			10 - 15			15 - 20			20 - 25			20 - 25			35 - 40				35 - 40			40 - 45
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
PAHs	2-Methylnaphthalene	µg/kq	EPA 8270M	20.2	J		3.69	U		3.63	U		3.50	U		17.9	U		21.0	U		8.31	J		5.15	U		4.42	U		4.35	U	200		
	Acenaphthene	µg/kq	EPA 8270M	20.1	J		3.69	U		3.63	U		3.50	U		63.3	U		27.4	J		5.48	J		4.69	U		4.42	U		4.35	U	300		
	Acenaphthylene	µg/kq	EPA 8270M	49.2	J		3.69	U		3.63	U		3.50	U		3.59	U		123	J		4.34	U		4.69	U		4.42	U		4.35	U	200		
	Anthracene	µg/kq	EPA 8270M	89.8	J		3.69	U		3.63	U		3.50	U		109	U		950	U		1.1	U		4.69	U		4.42	U		4.35	U	845		
	Benzo(a)anthracene	µg/kq	EPA 8270M	169	J		6.29	J		4.89	J		3.50	U		102	U		1,150	J		1.1	J		5.71	J		4.42	U		4.35	U	1050		
	Benzo(a)pyrene	µg/kq	EPA 8270M	276	J		9.81	J		5.92	J		3.50	U		88.5	U		1,660	J		1.1	J		8.05	J		4.42	U		4.35	U	1450		
	Benzo(b)fluoranthene	µg/kq	EPA 8270M	457	J		10.1	J		6.49	J		3.50	U		61.2	U		1,710	J			J		4.69	U		4.42	U		4.35	U	--		
	Benzo(ghi)perylene	µg/kq	EPA 8270M	484	J	1.6	9.87	J		6.10	J		3.50	U		46.3	U		1,070	J		3.6	J		5.54	J		4.42	U		4.35	U	300		
	Benzo(k)fluoranthene	µg/kq	EPA 8270M	305	J		7.80	J		5.77	J		3.50	U		78.7	U		1,290	J			J		4.83	J		4.42	U		4.35	U	13000		
	Chrysene	µg/kq	EPA 8270M	309	J		12.9	J		7.08	J		3.50	U		108	U		2,060	J		1.6	J		7.01	J		4.42	U		4.35	U	1290		
	Dibenzo(a,h)anthracene	µg/kq	EPA 8270M	124	J		3.69	U		3.63	U		3.50	U		17.6	U		371	U			J		4.69	U		4.42	U		4.35	U	1300		
	Fluoranthene	µg/kq	EPA 8270M	337	J		11.4	J		10.1	J		3.50	U		261	J		1,200	J			J		11.7	J		4.42	U		4.35	U	2230		
	Fluorene	µg/kq	EPA 8270M	22.6	J		3.69	U		3.63	U		3.50	U		64.4	J		51.4	J			J		4.69	U		4.42	U		4.35	U	536		
Indeno(1,2,3-cd)pyrene	µg/kq	EPA 8270M	390	J	3.9	6.85	J		4.95	J		3.50	U		47.5	U		1,150	J		11.5	J		4.69	U		4.42	U		4.35	U	100			
Naphthalene	µg/kq	EPA 8270M	35.8	J		3.69	U		3.63	U		3.50	U		35.1	U		21.0	U			J		15.3	J		11.2	J		4.35	U	561			
Phenanthrene	µg/kq	EPA 8270M	195	J		8.89	J		6.84	J		3.50	U		366	J		245	J			J		12.0	J		4.69	J		4.35	U	1170			
Pyrene	µg/kq	EPA 8270M	295	J		12.1	J		10.3	J		3.50	U		241	J		1,400	J			J		16.7	J		6.16	J		4.35	U	1520			
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kq	EPA 8270M	1,170	J	3.5	35.0	U	22.9	J		14.2	U		16.2	J		241.0	J			J		19.0	U		17.9	U		17.7	U	330			
	Butyl benzyl phthalate	µg/kq	EPA 8270M	40.6	J		15.0	U	14.7	U		14.2	U		14.6	U		34.2	U			U		19.0	U		17.9	U		17.7	U	--			
	Diethyl phthalate	µg/kq	EPA 8270M	342	J		15.0	U	14.7	U		14.2	U		14.6	U		34.2	U			U		19.0	U		17.9	U		17.7	U	600			
	Dimethyl phthalate	µg/kq	EPA 8270M	34.3	J		15.0	U	14.7	U		14.2	U		14.6	U		34.2	U			U		19.0	U		17.9	U		17.7	U	--			
	Di-n-butyl phthalate	µg/kq	EPA 8270M	551	J	9.2	15.0	U	14.7	U		14.2	U		14.6	U		34.2	U			U		19.0	U		17.9	U		17.7	U	60			
Di-n-octyl phthalate	µg/kq	EPA 8270M	166	J		15.0	U	14.7	U		14.2	U		14.6	U		34.2	U			U		19.0	U		17.9	U		17.7	U	--				
Organotin	Dibutyltin	µg/kq	PSEP	230	J		0.46	U	0.45	U		0.41	U		14	U		0.51	U			U		0.55	U		0.56	U		0.55	U	--			
	Monobutyltin	µg/kq	PSEP	110	J		0.44	U	0.43	U		0.39	U		0.42	U		0.49	U			U		0.53	U		0.53	U		0.52	U	--			
	Tetra-n-butyltin	µg/kq	PSEP	1.5	J		1.3	U	1.3	U		1.2	U		1.3	U		1.5	U			U		1.6	U		1.6	U		1.6	U	--			
	Tributyltin	µg/kq	PSEP	270	J	117.4	1.0	U	0.96	U		0.89	U		30	U	13.0	5.0	U			2.2	U		1.2	U		1.2	U		1.2	U	2.3		
Organochlorine Pesticides	4,4'-DDD	µg/kq	EPA 8081A	--			--		--			--		--			0.853	UJ					--			--			--			0.33			
	4,4'-DDE	µg/kq	EPA 8081A	--			--		--			--		--			0.454	J					--			--			--			0.33			
	4,4'-DDT	µg/kq	EPA 8081A	--			--		--			--		--			2.27	J					6.9			--			--			0.33			
	Aldrin	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			40			
	alpha-BHC	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
	alpha-Chlordane	µg/kq	EPA 8081A	--			--		--			--		--			2.79	J					--			--			--			--			
	beta-BHC	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
	Chlordane	µg/kq	EPA 8081A	--			--		--			--		--			16.3	J						--			--			--			0.37		
	delta-BHC	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
	Dieldrin	µg/kq	EPA 8081A	--			--		--			--		--			0.853	UJ						--			--			--			0.0081		
	Endosulfan I	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
	Endosulfan II	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
	Endosulfan sulfate	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
	Endrin	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			207			
	Endrin aldehyde	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
	Endrin ketone	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--			
gamma-BHC (Lindane)	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			4.99				
gamma-Chlordane	µg/kq	EPA 8081A	--			--		--			--		--			2.71	J					--			--			--			--				
Heptachlor	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			10				
Heptachlor epoxide	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			16				
Methoxychlor	µg/kq	EPA 8081A	--			--		--			--		--			0.420	UJ					--			--			--			--				
Toxaphene	µg/kq	EPA 8081A																																	

Table 11
 Vector 2.9 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.9																		JSCS Screening Levels
				092110-2-2.9-10-03-FS			092110-2-2.9-20-05-FS			092110-2-2.9-20-06-Dup			092110-2-2.9-30-08-FS			092110-2-2.9-35-09-FS			092110-2-2.9-45-11-FS			
				Date			9/21/2010			9/21/2010			9/21/2010			9/21/2010			9/21/2010			
				Depth (Feet Below Ground Surface)			5 - 10			15 - 20			15 - 20			25 - 30			30 - 35			
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Inorganics	Mercury	mg/kg	EPA 7471A	0.00910	J		0.131		1.9	0.0414	J		2.30		32.9	0.148		2.1	0.0116	J		0.07
	Arsenic	mg/kg	EPA 6020	4.02			10.0		1.4	13.4			7.95		1.1	6.95			2.56			7
	Barium	mg/kg	EPA 6020	93.9			72.8	J		111	J	1.9	190			131			74.3			--
	Chromium	mg/kg	EPA 6020	14.9			9.14	J		29.6	J		112		1	34.2			14.3			111
	Copper	mg/kg	EPA 6020	70.3			37.3	J		58.5	J		53.1			28.4			13.6			149
	Lead	mg/kg	EPA 6020	22.6		1.3	31.8	J	1.9	62.6	J	3.7	334		19.6	60.0		3.5	2.39			17
	Manganese	mg/kg	EPA 6020	677			423			594			329			430			259			1,100
	Nickel	mg/kg	EPA 6020	8.96			6.43	J		15.1	J		24.6			20.3			14.9			48.6
	Selenium	mg/kg	EPA 6020	0.0753	J		0.141	J		0.137	J		0.0957	J		0.0520	J		0.00250	U		2.0
	Silver	mg/kg	EPA 6020	0.151	J		0.146	J		0.176	J		0.786			0.202	J		0.0505	J		5
	Zinc	mg/kg	EPA 6020	120			129	J		181			291			121			40.7			459
PCBs	Aroclor 1016	µg/kg	EPA 8082	1.75	U		1.80	U		1.83	U		45.6	U		8.66	U		2.10	U		530
	Aroclor 1221	µg/kg	EPA 8082	3.48	U		3.60	U		3.66	U		90.8	U		17.3	U		4.19	U		--
	Aroclor 1232	µg/kg	EPA 8082	1.75	U		1.80	U		1.83	U		45.6	U		8.66	U		2.10	U		--
	Aroclor 1242	µg/kg	EPA 8082	1.75	U		1.80	U		1.83	U		45.6	U		50.5	J		2.10	U		--
	Aroclor 1248	µg/kg	EPA 8082	1.75	U		1.80	U		1.83	U		45.6	U		8.66	U		2.10	U		1,500
	Aroclor 1254	µg/kg	EPA 8082	1.75	U		1.80	U		1.83	U		312		1	8.66	U		2.10	U		300
	Aroclor 1260	µg/kg	EPA 8082	3.33	J		9.42			1.83	U		45.6	U		8.66	U		2.10	U		200
	Aroclor 1262	µg/kg	EPA 8082	1.75	U		1.80	U		2.87	J		45.6	U		8.66	U		2.10	U		--
	Aroclor 1268	µg/kg	EPA 8082	1.75	U		1.80	U		1.83	U		45.6	U		8.66	U		2.10	U		--
	Total PCBs	µg/kg	EPA 8082	3.33	J	8.5	9.42		24.2	2.87	J	7.4	312		800	50.5	J	129.5	21.0	U	53.8	0.39
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	3.40	U		20.6			8.71	J		79.8			11.6	J		4.17	U		200
	Acenaphthene	µg/kg	EPA 8270M	3.40	U		8.31	J		3.59	U		45.2			15.8	J		4.17	U		300
	Acenaphthylene	µg/kg	EPA 8270M	3.40	U		15.6			20.9			27.5	U		4.26	U		4.17	U		200
	Anthracene	µg/kg	EPA 8270M	3.40	U		28.6			20.1			79.3	U		13.9	J		4.17	U		845
	Benzo(a)anthracene	µg/kg	EPA 8270M	3.40	U		100			90.7			104			19.5			4.17	U		1050
	Benzo(a)pyrene	µg/kg	EPA 8270M	3.40	U		154			143			136			17.5			4.17	U		1450
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	3.40	U		127			101			133			16.4	J		4.17	U		--
	Benzo(ghi)perylene	µg/kg	EPA 8270M	3.40	U		146			136			118			11.7	J		4.17	U		300
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	3.40	U		115			86.4			101			15.1	J		4.17	U		13000
	Chrysene	µg/kg	EPA 8270M	3.40	U		140			119			161			27.0			4.17	U		1290
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	3.40	U		29.3			23.0			23.7			4.26	U		4.17	U		1300
	Fluoranthene	µg/kg	EPA 8270M	3.86	J		212			230			262			49.8			4.17	U		2230
	Fluorene	µg/kg	EPA 8270M	3.40	U		12.3	J		4.36	J		45.9			11.8	J		4.17	U		536
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	3.40	U		112		1.1	96.9			91.1			8.93	J		4.17	U		100
	Naphthalene	µg/kg	EPA 8270M	3.40	U		23.2			9.95	J		97.7			21.6			4.17	U		561
	Phenanthrene	µg/kg	EPA 8270M	3.40	U		144			96.7			430			44.3			4.17	U		1170
	Pyrene	µg/kg	EPA 8270M	3.77	J		263			262			313			47.9			4.17	U		1520

Please refer to notes at end of table.

Table 11
 Vector 2.9 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.9																		JSCS Screening Levels
				092110-2-2.9-10-03-FS			092110-2-2.9-20-05-FS			092110-2-2.9-20-06-Dup			092110-2-2.9-30-08-FS			092110-2-2.9-35-09-FS			092110-2-2.9-45-11-FS			
				Date			9/21/2010			9/21/2010			9/21/2010			9/21/2010			9/21/2010			
				Depth (Feet Below Ground Surface)			5 - 10			15 - 20			15 - 20			25 - 30			30 - 35			
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	13.8	U		95.5	J		29.4	J		1,710		5.2	75.9			16.9	U		330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	13.8	U		14.5	U		14.6	U		20.2	J		17.3	U		16.9	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	13.8	U		14.5	U		14.6	U		18.3	U		17.3	U		16.9	U		600
	Dimethyl phthalate	µg/kg	EPA 8270M	13.8	U		14.5	U		14.6	U		18.3	U		17.3	U		16.9	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	13.8	U		14.5	U		14.6	U		18.3	U		17.3	U		16.9	U		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	13.8	U		29.0	U		14.6	U		73.2	U		17.3	U		16.9	U		--
Organotins	Dibutyltin	µg/kg	PSEP	0.42	U		0.43	U		0.44	U		0.52	U		0.54	U		0.49	U		--
	Monobutyltin	µg/kg	PSEP	0.40	U		0.41	U		0.42	U		0.50	U		0.51	U		0.47	U		--
	Tetra-n-butyltin	µg/kg	PSEP	1.2	U		1.2	U		1.3	U		1.5	U		1.6	U		1.4	U		--
	Tributyltin	µg/kg	PSEP	0.91	U		8.2	J	3.6	2.9	J	1.3	1.1	U		1.1	U		1.1	U		2.3
Organochlorine Pesticides	4,4'-DDD	µg/kg	EPA 8081A	--			--			--			34.1		103.3	--			--			0.33
	4,4'-DDE	µg/kg	EPA 8081A	--			--			--			27.2		82.4	--			--			0.33
	4,4'-DDT	µg/kg	EPA 8081A	--			--			--			4.57	U		--			--			0.33
	Aldrin	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			40
	alpha-BHC	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	alpha-Chlordane	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	beta-BHC	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	Chlordane	µg/kg	EPA 8081A	--			--			--			51.1	U		--			--			0.37
	delta-BHC	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	Dieldrin	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			0.0081
	Endosulfan I	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	Endosulfan II	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	Endosulfan sulfate	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	Endrin	µg/kg	EPA 8081A	--			--			--			2.25	UJ		--			--			207
	Endrin aldehyde	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	Endrin ketone	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--
	gamma-BHC (Lindane)	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			4.99
	gamma-Chlordane	µg/kg	EPA 8081A	--			--			--			4.34	J		--			--			--
	Heptachlor	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			10
Heptachlor epoxide	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			16	
Methoxychlor	µg/kg	EPA 8081A	--			--			--			2.25	U		--			--			--	
Toxaphene	µg/kg	EPA 8081A	--			--			--			68.1	U		--			--			--	
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	1.75	J		27.5	J		12.3	J		541			70.0			0.956	J		--
	Heavy Oil	mg/kg	NWTPH-Dx	5.16	J		127	J		65.4	J		991			146			2.10	J		--

- Notes:
- = Not applicable/not analyzed.
 - mg/kg = Milligrams per kilogram.
 - µg/kg = Micrograms per kilogram.
 - J = The result is an estimated quantity.
 - U = Undetected at the method detection limit shown.
 - UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
 - JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07
 - SLV = Screening Level Value.
 - Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation

Table 12
 Vector 2.10 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092210-2-2.10- Surface-01-WS			092210-2-2.10- 1.5-02-FS			092210-2-2.10- 10-04-FS			092210-2-2.10- 20-06-FS			092210-2-2.10- 30-08-FS			092210-2-2.10- 30-09-Dup			092210-2-2.10- 35-10-FS			102610-2-2.10- 35-01-FS			102610-2-2.10- 45-03-FS			JSCS Screening Levels	
				Date			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010			10/26/2010			9/22/2010				
				Depth (Feet Below Ground Surface)			0	0 - 1.5		0 - 1.5	5 - 10		5 - 10	15 - 20		15 - 20	25 - 30		25 - 30	25 - 30		25 - 30	30 - 35		30 - 35	30 - 35		30 - 35	40 - 45			40 - 45
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Inorganics	Mercury	mg/kg	EPA 7471A	0.0328	J		0.0480	J		0.00400	J		0.0454	J		0.0241	J		0.0505	J		0.0983		1.4	0.237			3.4	0.0186	J		0.07
	Arsenic	mg/kg	EPA 6020	34.0		4.9	28.6		4.1	2.02	J		4.13	J		2.74			4.89			4.89			7.35			3.35			7	
	Barium	mg/kg	EPA 6020	835			336			61.9	J		138	J		132			121			118			219			122			--	
	Chromium	mg/kg	EPA 6020	142		1.3	55.80			7.65	J		23.8	J		22.6			21.2			18.8			52.4			18.3			111	
	Copper	mg/kg	EPA 6020	3,560		23.9	1,590		10.7	84	J		28.2	J		23.5			26.9			19.6			52.0			16.8			149	
	Lead	mg/kg	EPA 6020	102		6.0	66.9		3.9	2.89	J		13.0	J		13.7			15.6			18.1		1.1	144			8.5	3.04		17	
	Manganese	mg/kg	EPA 6020	3,650		3.3	2,790		2.5	409	J		473	J		481			532			473			372			319			1,100	
	Nickel	mg/kg	EPA 6020	107		2.2	31.6			3.41	J		15.2	J		14.8			13.0			17.9			25.4			18.7			48.6	
	Selenium	mg/kg	EPA 6020	0.585	J		0.499	J		0.0517	J		0.0761	J		0.0940	J		0.141	J		0.0273	J		0.181	J		0.0259	U		2.0	
	Silver	mg/kg	EPA 6020	1.03			1.03			0.129	J		0.171	J		0.169	J		0.164	J		0.129	J		1.18	J		0.0711	J		5	
Zinc	mg/kg	EPA 6020	3,320		7.2	418			76.0	J		77.4	J		70.6			66.4			70.5			266			47.7			459		
PCBs	Aroclor 1016	µg/kg	EPA 8082	1.94	U		1.84	U		1.81	U		2.12	U		2.09	U		1.95	U		4.52	U		2.55	U		2.15	U		530	
	Aroclor 1221	µg/kg	EPA 8082	3.87	U		3.68	U		3.61	U		4.22	U		4.16	U		3.89	U		9.00	U		5.08	U		4.29	U		--	
	Aroclor 1232	µg/kg	EPA 8082	1.94	U		1.84	U		1.81	U		2.12	U		2.09	U		1.95	U		4.52	U		2.55	U		2.15	U		--	
	Aroclor 1242	µg/kg	EPA 8082	1.94	U		1.84	U		1.81	U		2.12	U		2.09	U		1.95	U		4.52	U		2.55	U		2.15	U		--	
	Aroclor 1248	µg/kg	EPA 8082	1.94	U		1.84	U		7.42	U		2.12	U		2.09	U		1.95	U		4.52	U		2.55	U		2.15	U		1,500	
	Aroclor 1254	µg/kg	EPA 8082	1.94	U		1.84	U		1.81	U		2.12	U		2.09	U		1.95	U		55.3	J		2.55	U		2.15	U		300	
	Aroclor 1260	µg/kg	EPA 8082	1.94	U		58.3	J		3.22	J		6.82	J		2.09	U		1.95	U		4.52	U		29.2	U		2.15	U		200	
	Aroclor 1262	µg/kg	EPA 8082	22.3	J		1.84	U		1.81	U		2.12	U		2.09	U		1.95	U		4.52	U		2.55	U		2.15	U		--	
	Aroclor 1268	µg/kg	EPA 8082	1.94	U		1.84	U		1.81	U		2.12	U		2.09	U		1.95	U		4.52	U		2.55	U		2.15	U		--	
	Total PCBs	µg/kg	EPA 8082	22.3	J	57.2	58.3	J	149.5	10.6	J	27.2	6.82	J	17.5	20.9	U	53.6	19.5	U	50.0	55.3	J	141.8	29.2	U	74.9	21.5	U	55.1	0.39	
SVOCs	1,2,4-Trichlorobenzene	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		--	
	1,2-Dichlorobenzene	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		1,700	
	1,3-Dichlorobenzene	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		300	
	1,4-Dichlorobenzene	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		300	
	2,4,5-Trichlorophenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	2,4,6-Trichlorophenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	2,4-Dichlorophenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	2,4-Dimethylphenol	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		--	
	2,4-Dinitrophenol	µg/kg	EPA 8270C	9,240	U		2,200	U		--			2,530	U		2,480	U		2,320	U		2,720	U		3,030	U		2,550	U		--	
	2,4-Dinitrotoluene	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		--	
	2,6-Dinitrotoluene	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		--	
	2-Chloronaphthalene	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	2-Chlorophenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	2-Methylphenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	2-Nitroaniline	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	2-Nitrophenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	3,3'-Dichlorobenzidine	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		--	
	3,4-Methylphenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	3-Nitroaniline	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		--	
	4,6-Dinitro-2-methylphenol	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U		637	U		--	
	4-Bromophenyl phenyl ether	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	4-Chloro-3-methylphenol	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	4-Chloroaniline	µg/kg	EPA 8270C	762	U		181	U		--			209	U		204	U		191	U		224	U		250	U		210	U		--	
	4-Chlorophenyl phenyl ether	µg/kg	EPA 8270C	462	U		110	U		--			127	U		124	U		116	U		136	U		151	U		127	U		--	
	4-Nitroaniline	µg/kg	EPA 8270C	323	U		76.9	U		--			88.7	U		86.7	U		81.1	U		95.2	U		106	U		89.2	U		--	
	4-Nitrophenol	µg/kg	EPA 8270C	2,310	U		549	U		--			634	U		619	U		580	U		680	U		756	U						

Table 12
 Vector 2.10 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092210-2-2.10- Surface-01-WS			092210-2-2.10- 1.5-02-FS			092210-2-2.10- 10-04-FS			092210-2-2.10- 20-06-FS			092210-2-2.10- 30-08-FS			092210-2-2.10- 30-09-Dup			092210-2-2.10- 35-10-FS			102610-2-2.10- 35-01-FS			102610-2-2.10- 45-03-FS			JSCS Screening Levels		
				Date			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010			9/22/2010			10/26/2010			9/22/2010					
				Depth (Feet Below Ground Surface)			0			0 - 1.5			5 - 10			15 - 20			25 - 30			25 - 30			30 - 35			30 - 35				40 - 45	
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	32.5			10.3	J		3.57	U		4.15	U		4.10	U		15.7	U		51.8			31.6	J		4.20	U		200		
	Acenaphthene	µg/kg	EPA 8270M	36.7			15.1	J		3.57	U		4.15	U		4.10	U		3.81	U		51.8			38.1	J		5.05	J		300		
	Acenaphthylene	µg/kg	EPA 8270M	40.6			7.27	U		3.57	U		4.15	U		4.10	U		4.39	J		34.7	J		31.4	J		4.20	U		200		
	Anthracene	µg/kg	EPA 8270M	97.8			37.1			3.57	U		4.15	U		4.10	U		4.57	J		64.1			57.2			4.20	U		845		
	Benzo(a)anthracene	µg/kg	EPA 8270M	258			72.9			3.57	U		4.15	U		4.10	U		6.69	J		86.2			122			4.20	U		1050		
	Benzo(a)pyrene	µg/kg	EPA 8270M	322			75.1			4.41	J		4.98	J		4.10	U		11.2	J		130			187			4.20	U		1450		
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	560			78.9			4.66	J		4.57	J		4.10	U		9.91	J		106			146			4.20	U		--		
	Benzo(ghi)perylene	µg/kg	EPA 8270M	288			52.6			3.57	U		5.43	J		4.10	U		11.9	J		118			160			4.20	U		300		
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	420			63.8			3.57	U		4.15	U		4.10	U		7.25	J		81.2			120			4.20	U		13000		
	Chrysene	µg/kg	EPA 8270M	560			87.5			5.31	J		4.62	J		4.22	J		10.6	J		150			420			4.20	U		1290		
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	88.6			16.7	J		3.57	U		4.15	U		4.10	U		3.81	U		15.7	J		23.3	J		4.20	U		1300		
	Fluoranthene	µg/kg	EPA 8270M	797			186			5.93	J		7.42	J		9.47	J		22.5			387			332			4.20	U		2230		
	Fluorene	µg/kg	EPA 8270M	36.8			19.8	J		3.57	U		4.15	U		4.10	U		7.23	J		63.9			48.6			4.20	U		536		
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	262		2.6	46.8			3.57	U		4.15	U		4.10	U		7.69	J		82.2			116		1.2	4.20	U		100		
	Naphthalene	µg/kg	EPA 8270M	62.2			10.2	J		3.57	U		4.15	U		4.10	U		12.5	J		93.9			69.2			7.91	J		561		
	Phenanthrene	µg/kg	EPA 8270M	556			177			4.62	J		4.15	U		8.36	J		24.9			402			291			4.20	U		1170		
Pyrene	µg/kg	EPA 8270M	576			147			5.92	J		8.73	J		9.70	J		26.2			410			400			4.20	U		1520			
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	1,130		3.4	29.5	U		14.5	U		16.8	U		16.7	U		15.5	U		183			204	U		17.1	U		330		
	Butyl benzyl phthalate	µg/kg	EPA 8270M	127	J		77.1			14.5	U		16.8	U		16.7	U		15.5	U		36.5	U		40.8	U		17.1	U		--		
	Diethyl phthalate	µg/kg	EPA 8270M	84.2	J		29.5	U		14.5	U		16.8	U		16.7	U		15.5	U		36.5	U		40.8	U		17.1	U		600		
	Dimethyl phthalate	µg/kg	EPA 8270M	77.5	U		29.5	U		14.5	U		16.8	U		16.7	U		15.5	U		36.5	U		40.8	U		17.1	U		--		
	Di-n-butyl phthalate	µg/kg	EPA 8270M	77.5	U		29.5	U		14.5	U		16.8	U		16.7	U		15.5	U		36.5	U		40.8	U		17.1	U		60		
	Di-n-octyl phthalate	µg/kg	EPA 8270M	77.5	U		29.5	U		14.5	U		16.8	U		16.7	U		15.5	U		36.5	U		204	U		17.1	U		--		
Organotins	Dibutyltin	µg/kg	PSEP	140			0.42	U		0.43	U		0.49	U		0.50	U		0.45	U		0.54	U		0.56	U		0.50	U		--		
	Monobutyltin	µg/kg	PSEP	53	J		0.40	U		2.7	U		0.47	U		0.47	U		0.43	U		0.51	U		0.53	U		0.47	U		--		
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.2	U		1.3	U		1.4	U		1.5	U		1.3	U		1.6	U		1.6	U		1.5	U		--		
	Tributyltin	µg/kg	PSEP	540		234.8	8.9		3.9	0.92	U		1.1	U		1.1	U		0.97	U		1.2	U		1.2	U		1.1	U		2.3		
Organochlorine Pesticides	4,4'-DDD	µg/kg	EPA 8081A	1.56	UJ	4.7	2.22	U		--			--			--			--		129	J	390.9	--		--		--		0.33			
	4,4'-DDE	µg/kg	EPA 8081A	1.56	UJ	4.7	1.49	U		--			--			--			--		207	J	627.3	--		--		--		0.33			
	4,4'-DDT	µg/kg	EPA 8081A	3.90	UJ	11.8	7.43	U		--			--			--			--		2.23	UJ	--	--		--		--		0.33			
	Aldrin	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		40			
	alpha-BHC	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		1.81	UJ	--	--		--		--		--			
	alpha-Chlordane	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		7.92	J	--	--		--		--		--			
	beta-BHC	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		1.81	UJ	--	--		--		--		--			
	Chlordane	µg/kg	EPA 8081A	17.5	UJ	47.3	16.6	U		--			--			--			--		114	J	308.1	--	--		--		--	0.37			
	delta-BHC	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		--			
	Dieldrin	µg/kg	EPA 8081A	1.56	UJ	192.6	2.97	U		--			--			--			--		1.81	UJ	--	--		--		--		0.0081			
	Endosulfan I	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		--			
	Endosulfan II	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		--			
	Endosulfan sulfate	µg/kg	EPA 8081A	2.33	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		--			
	Endrin	µg/kg	EPA 8081A	1.56	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		207			
	Endrin aldehyde	µg/kg	EPA 8081A	2.33	UJ		2.22	U		--			--			--			--		1.81	UJ	--	--		--		--		--			
	Endrin ketone	µg/kg	EPA 8081A	3.89	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		--			
	gamma-BHC (Lindane)	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		4.99			
	gamma-Chlordane	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		22.0	J	--	--		--		--		--			
	Heptachlor	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		0.894	UJ	--	--		--		--		10			
Heptachlor epoxide	µg/kg	EPA 8081A	0.769	UJ		0.731	U		--			--			--			--		1.81	UJ	--	--		--		--		16				
Methoxychlor	µg/kg	EPA 8081A	3.84	UJ		3.66	U		--			--			--			--		2.23	UJ	--	--		--		--		--				
Toxaphene	µg/kg	EPA 8081A	23.3	UJ		22.2	U		--			--			--			--		27.1	UJ	--	--		--		--		--				
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	112	J		102			4.82	J		2.37	J		1.81	J		2.10	J		281			856			2.78	J		--		
	Heavy Oil	mg/kg	NWTPH-Dx	675	J		904			29.7	J		9.58	J		6.03	J		7.13	J		513			1,410			5.94	J		--		

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 13
 Vector 2.11 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092710-2-2.11-10-02-FS			092710-2-2.11-20-04-FS			092710-2-2.11-25-05-FS			JSCS Screening Levels	
				Date			Date			Date				
				9/27/2010			9/27/2010			9/27/2010				
				Depth (Feet Below Ground Surface)			5 - 10			15 - 20				20 - 25
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Inorganics	Mercury	mg/kg	EPA 7471A	0.0537	J		0.0387	J		0.268		3.8	0.07	
	Arsenic	mg/kg	EPA 6020	4.61			5.86			3.19			7	
	Barium	mg/kg	EPA 6020	166			127			89.2			--	
	Chromium	mg/kg	EPA 6020	46.2			27.5			84.1			111	
	Copper	mg/kg	EPA 6020	44.2			38.6			38.5			149	
	Lead	mg/kg	EPA 6020	88.0		5.2	9.88			154		9.1	17	
	Manganese	mg/kg	EPA 6020	829			768			288			1,100	
	Nickel	mg/kg	EPA 6020	24.5			19.2			46.0			48.6	
	Selenium	mg/kg	EPA 6020	0.101	J		0.988	J		0.0539	J		2.0	
	Silver	mg/kg	EPA 6020	0.201	J		0.290	U		0.660	J		5	
	Zinc	mg/kg	EPA 6020	203			76.6			153			459	
	PCBs	Aroclor 1016	µg/kg	EPA 8082	2.09	U		2.22	U		8.97	U		530
Aroclor 1221		µg/kg	EPA 8082	4.17	U		4.42	U		17.9	U		--	
Aroclor 1232		µg/kg	EPA 8082	2.09	U		2.22	U		8.97	U		--	
Aroclor 1242		µg/kg	EPA 8082	2.09	U		2.22	U		137	J		--	
Aroclor 1248		µg/kg	EPA 8082	2.09	U		9.50			8.97	U		1,500	
Aroclor 1254		µg/kg	EPA 8082	3.51	J		2.22	U		8.97	U		300	
Aroclor 1260		µg/kg	EPA 8082	2.09	U		2.22	U		78.6	J		200	
Aroclor 1262		µg/kg	EPA 8082	2.09	U		2.22	U		8.97	U		--	
Aroclor 1268		µg/kg	EPA 8082	2.09	U		2.22	U		8.97	U		--	
Total PCBs		µg/kg	EPA 8082	3.51	J	9.0	9.50		24.4	216	J	553.8	0.39	
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	4.14	U		4.37	UJ		53.3			200	
	Acenaphthene	µg/kg	EPA 8270M	6.70	J		4.37	UJ		43.9			300	
	Acenaphthylene	µg/kg	EPA 8270M	4.14	U		4.37	UJ		29.4			200	
	Anthracene	µg/kg	EPA 8270M	4.14	U		4.37	UJ		86.0			845	
	Benzo(a)anthracene	µg/kg	EPA 8270M	4.54	J		4.37	UJ		97.4			1050	
	Benzo(a)pyrene	µg/kg	EPA 8270M	6.35	J		4.37	UJ		110			1450	
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	5.73	J		4.37	UJ		68.4			--	
	Benzo(ghi)perylene	µg/kg	EPA 8270M	5.91	J		4.37	UJ		65.3			300	
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	4.88	J		4.37	UJ		73.1			13000	
	Chrysene	µg/kg	EPA 8270M	6.61	J		4.37	UJ		125			1290	
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	4.14	U		4.37	UJ		14.9	J		1300	
	Fluoranthene	µg/kg	EPA 8270M	11.4	J		4.37	UJ		204			2230	
	Fluorene	µg/kg	EPA 8270M	4.14	U		4.37	UJ		77.7			536	
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	4.35	J		4.37	UJ		53.7			100	
	Naphthalene	µg/kg	EPA 8270M	4.14	U		4.37	UJ		37.9			561	
	Phenanthrene	µg/kg	EPA 8270M	7.74	J		4.37	UJ		263			1170	
	Pyrene	µg/kg	EPA 8270M	12.5	J		4.37	UJ		218			1520	

Please refer to notes at end of table.

Table 13
 Vector 2.11 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092710-2-2.11-10-02-FS			092710-2-2.11-20-04-FS			092710-2-2.11-25-05-FS			JSCS Screening Levels
				Date			Date			Date			
				9/27/2010			9/27/2010			9/27/2010			
Depth (Feet Below Ground Surface)				5 - 10			15 - 20			20 - 25			
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	16.8	U		17.8	UJ		426		1.3	330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	16.8	U		17.8	UJ		35.6	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	16.8	U		17.8	UJ		17.8	U		600
	Dimethyl phthalate	µg/kg	EPA 8270M	16.8	U		17.8	UJ		17.8	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	16.8	U		17.8	UJ		17.8	U		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	16.8	U		17.8	UJ		89.0	U		--
Organotins	Dibutyltin	µg/kg	PSEP	0.47	U		0.52	UJ		0.59	U		--
	Monobutyltin	µg/kg	PSEP	0.45	U		0.50	UJ		0.56	U		--
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.5	UJ		1.7	U		--
	Tributyltin	µg/kg	PSEP	1.0	U		1.1	UJ		1.3	U		2.3
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	5.75	J		0.934	UJ		548			--
	Heavy Oil	mg/kg	NWTPH-Dx	17.8	J		2.35	J		1,050			--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 14
 Vector 2.12 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092710-2-2.12-5-01-FS			092710-2-2.12-15-03-FS			092710-2-2.12-15-05-Dup			JSCS Screening Levels			
				Date			9/27/2010			9/27/2010				9/27/2010		
				Depth (Feet Below Ground Surface)			0 - 5			10 - 15				10 - 15		
				Result	Flag	Excedance	Result	Flag	Excedance	Result	Flag	Excedance				
Inorganics	Mercury	mg/kg	EPA 7471A	0.0289	J		0.0536	J		0.0803	J	1.1	0.07			
	Arsenic	mg/kg	EPA 6020	10.9		1.6	2.62			2.67			7			
	Barium	mg/kg	EPA 6020	200			134			135			--			
	Chromium	mg/kg	EPA 6020	27.3			23.7			22.8			111			
	Copper	mg/kg	EPA 6020	27.9			21.7			23.2			149			
	Lead	mg/kg	EPA 6020	23.3		1.4	7.75			8.83			17			
	Manganese	mg/kg	EPA 6020	670			272			269			1,100			
	Nickel	mg/kg	EPA 6020	21.4			23.7			23.6			48.6			
	Selenium	mg/kg	EPA 6020	0.146	J		0.0531	J		0.0267	J		2.0			
	Silver	mg/kg	EPA 6020	0.159	J		0.0930	J		0.100	J		5			
	Zinc	mg/kg	EPA 6020	92.1			61.8			62.2			459			
PCBs	Aroclor 1016	µg/kg	EPA 8082	2.21	U		2.21	U		2.22	U		530			
	Aroclor 1221	µg/kg	EPA 8082	4.41	U		4.42	U		4.43	U		--			
	Aroclor 1232	µg/kg	EPA 8082	2.21	U		2.21	U		2.22	U		--			
	Aroclor 1242	µg/kg	EPA 8082	2.21	U		2.21	U		2.22	U		--			
	Aroclor 1248	µg/kg	EPA 8082	2.21	U		2.21	U		2.22	U		1,500			
	Aroclor 1254	µg/kg	EPA 8082	2.21	U		2.21	U		2.22	U		300			
	Aroclor 1260	µg/kg	EPA 8082	6.98	U		2.21	U		2.22	U		200			
	Aroclor 1262	µg/kg	EPA 8082	2.21	U		2.21	U		2.22	U		--			
	Aroclor 1268	µg/kg	EPA 8082	2.21	U		2.21	U		2.22	U		--			
	Total PCBs	µg/kg	EPA 8082	6.98		17.9	22.1	U	56.7	22.2	U	56.9	0.39			
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	4.32	U		20.5			4.34	U		200			
	Acenaphthene	µg/kg	EPA 8270M	4.32	U		26.1			24.0			300			
	Acenaphthylene	µg/kg	EPA 8270M	4.32	U		4.38	U		5.46	J		200			
	Anthracene	µg/kg	EPA 8270M	4.32	U		5.15	J		4.34	U		845			
	Benzo(a)anthracene	µg/kg	EPA 8270M	4.32	U		10.8	J		7.22	J		1050			
	Benzo(a)pyrene	µg/kg	EPA 8270M	6.25	J		12.6	J		9.89	J		1450			
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	6.36	J		12.7	J		7.37	J		--			
	Benzo(ghi)perylene	µg/kg	EPA 8270M	5.82	J		7.75	J		8.31	J		300			
	Benzo(k)fluranthene	µg/kg	EPA 8270M	4.32	U		7.74	J		6.26	J		13000			
	Chrysene	µg/kg	EPA 8270M	6.79	J		17.0	J		8.59	J		1290			
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	4.32	U		4.38	U		4.34	U		1300			
	Fluoranthene	µg/kg	EPA 8270M	7.30	J		27.8			16.5	J		2230			
	Fluorene	µg/kg	EPA 8270M	4.32	U		5.25	J		4.34	U		536			
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	4.32	U		5.62	J		5.95	J		100			
	Naphthalene	µg/kg	EPA 8270M	4.32	U		15.8	J		21.9			561			
	Phenanthrene	µg/kg	EPA 8270M	4.87	J		24.9			16.1	J		1170			
	Pyrene	µg/kg	EPA 8270M	11.5	J		25.0			18.3			1520			

Please refer to notes at end of table.

Table 14
 Vector 2.12 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092710-2-2.12-5-01-FS			092710-2-2.12-15-03-FS			092710-2-2.12-15-05-Dup			JSCS Screening Levels			
				Date			9/27/2010			9/27/2010				9/27/2010		
				Depth (Feet Below Ground Surface)			0 - 5			10 - 15				10 - 15		
		Result	Flag	Excedance	Result	Flag	Excedance	Result	Flag	Excedance						
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	17.5	U		35.5	U		17.6	U		330			
	Butyl benzyl phthalate	µg/kg	EPA 8270M	17.5	U		35.5	U		17.6	U		--			
	Diethyl phthalate	µg/kg	EPA 8270M	17.5	U		35.5	U		17.6	U		600			
	Dimethyl phthalate	µg/kg	EPA 8270M	17.5	U		35.5	U		17.6	U		--			
	Di-n-butyl phthalate	µg/kg	EPA 8270M	17.5	U		35.5	U		17.6	U		60			
	Di-n-octyl phthalate	µg/kg	EPA 8270M	17.5	U		35.5	U		17.6	U		--			
Organotins	Dibutyltin	µg/kg	PSEP	0.52	U		0.53	U		0.57	U		--			
	Monobutyltin	µg/kg	PSEP	0.50	U		0.50	U		0.54	U		--			
	Tetra-n-butyltin	µg/kg	PSEP	1.5	U		1.6	U		1.7	U		--			
	Tributyltin	µg/kg	PSEP	1.1	U		1.1	U		1.2	U		2.3			
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	21.6			12.8	J		2.78	J		--			
	Heavy Oil	mg/kg	NWTPH-Dx	93.8			35.7			6.91	J		--			

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U= Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 15
Vector 2.13 Soil Results
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092710-2-2.13-5-01-FS			092710-2-2.13-10-01-FS			JSCS Screening Levels
				Date			Date			
				9/27/2010			9/27/2010			
				Depth (Feet Below Ground Surface)			5 - 10			
			Result	Flag	Exceedance	Result	Flag	Exceedance		
Inorganics	Mercury	mg/kg	EPA 7471A	0.0397	J		0.0391	J		0.07
	Arsenic	mg/kg	EPA 6020	6.27			2.67			7
	Barium	mg/kg	EPA 6020	111			90.6			--
	Chromium	mg/kg	EPA 6020	23.9			26.0			111
	Copper	mg/kg	EPA 6020	52.0			18.4			149
	Lead	mg/kg	EPA 6020	54.4		3.2	42.3		2.5	17
	Manganese	mg/kg	EPA 6020	342			293			1,100
	Nickel	mg/kg	EPA 6020	19.9			20.6			48.6
	Selenium	mg/kg	EPA 6020	0.0429	J		0.0353	J		2.0
	Silver	mg/kg	EPA 6020	0.123	J		0.0848	J		5
	Zinc	mg/kg	EPA 6020	103			100			459
PCBs	Aroclor 1016	µg/kg	EPA 8082	4.07	U		2.36	U		530
	Aroclor 1221	µg/kg	EPA 8082	8.11	U		4.71	U		--
	Aroclor 1232	µg/kg	EPA 8082	4.07	U		2.36	U		--
	Aroclor 1242	µg/kg	EPA 8082	4.07	U		2.36	U		--
	Aroclor 1248	µg/kg	EPA 8082	75.7	J		2.36	U		1,500
	Aroclor 1254	µg/kg	EPA 8082	4.07	U		2.36	U		300
	Aroclor 1260	µg/kg	EPA 8082	22.3			2.50	J		200
	Aroclor 1262	µg/kg	EPA 8082	4.07	U		2.36	U		--
	Aroclor 1268	µg/kg	EPA 8082	4.07	U		2.36	U		--
Total PCBs	µg/kg	EPA 8082	98.0	J	251.3	2.50	J	6.4	0.39	
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	32.4	J		4.66	U		200
	Acenaphthene	µg/kg	EPA 8270M	74.6			8.98	J		300
	Acenaphthylene	µg/kg	EPA 8270M	16.7	J		9.15	J		200
	Anthracene	µg/kg	EPA 8270M	46.9			7.66	J		845
	Benzo(a)anthracene	µg/kg	EPA 8270M	82.9			17.5	J		1050
	Benzo(a)pyrene	µg/kg	EPA 8270M	66.5			22.3			1450
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	58.1			12.6	J		--
	Benzo(ghi)perylene	µg/kg	EPA 8270M	50.1			17.2	J		300
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	53.7			15.5	J		13000
	Chrysene	µg/kg	EPA 8270M	105.0			20.5			1290
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	12.3	J		4.66	U		1300
	Fluoranthene	µg/kg	EPA 8270M	216			33.8			2230
	Fluorene	µg/kg	EPA 8270M	29.7	J		4.66	U		536
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	38.0			13.1	J		100
	Naphthalene	µg/kg	EPA 8270M	50.9			8.82	J		561
	Phenanthrene	µg/kg	EPA 8270M	211			29.2			1170
Pyrene	µg/kg	EPA 8270M	197			39.8			1520	

Please refer to notes at end of table.

Table 15
 Vector 2.13 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092710-2-2.13-5-01-FS			092710-2-2.13-10-01-FS			JSCS Screening Levels
				Date			Date			
				9/27/2010			9/27/2010			
				Depth (Feet Below Ground Surface)			Depth (Feet Below Ground Surface)			
			Result	Flag	Exceedance	Result	Flag	Exceedance		
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	32.6	U		18.9	U		330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	32.6	U		18.9	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	32.6	U		18.9	U		600
	Dimethyl phthalate	µg/kg	EPA 8270M	32.6	U		18.9	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	32.6	U		18.9	U		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	65.1	U		18.9	U		--
Organotins	Dibutyltin	µg/kg	PSEP	0.49	U		0.51	U		--
	Monobutyltin	µg/kg	PSEP	0.47	U		0.49	U		--
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.5	U		--
	Tributyltin	µg/kg	PSEP	1.0	U		1.1	U		2.3
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	39.4			8.14	J		--
	Heavy Oil	mg/kg	NWTPH-Dx	126			20.4	J		--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U= Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 16
 Vector 2.14 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092810-2-2.14-5-01-FS			092810-2-2.14-10-02-FS			092810-2-2.14-20-04-FS			092810-2-2.14-25-05-FS			092810-2-2.14-25-06-DUP			JSCS Screening Levels			
				Date			9/28/2010			9/28/2010			9/28/2010			9/28/2010				9/28/2010		
				Depth (Feet Below Ground Surface)			0 - 5			5 - 10			15 - 20			20 - 25				20 - 25		
				Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc		Result	Flag	Exceedanc
Inorganics	Mercury	mg/kg	EPA 7471A	0.0112	J		0.248		3.5	0.128	J	1.8	0.248		3.5	0.186		2.7	0.07			
	Arsenic	mg/kg	EPA 6020	4.51			9.05		1.3	5.43			4.40			3.13			7			
	Barium	mg/kg	EPA 6020	129	J		252			199			158			117			--			
	Chromium	mg/kg	EPA 6020	16.6			30.8			20.4			30.2			21.8			111			
	Copper	mg/kg	EPA 6020	55.7	J		321		2.2	38.5			42.8	J		23.2	J		149			
	Lead	mg/kg	EPA 6020	10.3			310		18.2	122		7.2	35.1	J	2.1	18.0	J	1.1	17			
	Manganese	mg/kg	EPA 6020	719			629			454			707	J		285	J		1,100			
	Nickel	mg/kg	EPA 6020	18.2			25.1			15.5			25.3			25.2			48.6			
	Selenium	mg/kg	EPA 6020	0.056	J		0.217	J		0.603	J		0.168	J		0.0124	U		2.0			
	Silver	mg/kg	EPA 6020	0.084	J		0.310	J		0.295	U		0.538	J		0.155	J		5			
	Zinc	mg/kg	EPA 6020	93.0	J		426			190			132	J		67.8	J		459			
	PCBs	Aroclor 1016	µg/kg	EPA 8082	3.84	U		8.69	U		2.24	U		4.60	U		8.51	U		530		
Aroclor 1221		µg/kg	EPA 8082	7.65	U		17.3	U		4.46	U		9.17	U		17.0	U		--			
Aroclor 1232		µg/kg	EPA 8082	3.84	U		8.69	U		2.24	U		4.60	U		8.51	U		--			
Aroclor 1242		µg/kg	EPA 8082	3.84	U		8.69	U		2.24	U		18.6	J		8.51	U		--			
Aroclor 1248		µg/kg	EPA 8082	3.84	U		94.5			2.24	U		4.60	U		8.51	U		1,500			
Aroclor 1254		µg/kg	EPA 8082	15.3			8.69	U		5.70			11.8	J		24.4	J		300			
Aroclor 1260		µg/kg	EPA 8082	3.84	U		49.8	J		2.24	U		4.60	U		8.51	U		200			
Aroclor 1262		µg/kg	EPA 8082	3.84	U		8.69	U		2.24	U		4.60	U		8.51	U		--			
Aroclor 1268		µg/kg	EPA 8082	3.84	U		8.69	U		2.24	U		4.60	U		8.51	U		--			
Total PCBs		µg/kg	EPA 8082	15.3		39.2	144	J	369.2	5.70		14.6	30.4	J	77.9	24.4	J	62.6	0.39			
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	5.56	J		14.5	J		4.39	UJ		37.9	J		64.3	J		200			
	Acenaphthene	µg/kg	EPA 8270M	6.38	J		8.47	U		4.39	UJ		23.6	J		38.4			300			
	Acenaphthylene	µg/kg	EPA 8270M	3.76	U		8.47	U		5.59	J		9.79	J		14.3	J		200			
	Anthracene	µg/kg	EPA 8270M	3.76	U		17.7	J		11.7	J		64.7			30.0			845			
	Benzo(a)anthracene	µg/kg	EPA 8270M	5.79	J		53.2			57.4	J		181	J		45.1	J		1050			
	Benzo(a)pyrene	µg/kg	EPA 8270M	5.59	J		74.2			73.2	J		147	J		56.4	J		1450			
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	5.34	J		70.6			65.0	J		124	J		50.3	J		--			
	Benzo(ghi)perylene	µg/kg	EPA 8270M	4.41	J		72.2			61.8	J		98.3	J		42.9	J		300			
	Benzo(k)fluranthene	µg/kg	EPA 8270M	4.61	J		59.1			60.4	J		88.4			43.3			13000			
	Chrysene	µg/kg	EPA 8270M	6.30	J		82.9			81.2	J		267	J		68.1	J		1290			
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	3.76	U		15.3	J		11.8	J		35.6	J		10.4	J		1300			
	Fluoranthene	µg/kg	EPA 8270M	18.6			133			130	J		308	J		107	J		2230			
	Fluorene	µg/kg	EPA 8270M	5.06	J		12.0	J		4.39	UJ		47.2	J		31.3	J		536			
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	3.92	J		50.0			47.7	J		66.9	J		34.2	J		100			
	Naphthalene	µg/kg	EPA 8270M	9.25	J		52.8			4.39	UJ		54.3	J		93.3	J		561			
	Phenanthrene	µg/kg	EPA 8270M	26.3			108			64.4	J		318	J		121	J		1170			
	Pyrene	µg/kg	EPA 8270M	14.1	J		125			154	J		307	J		114	J		1520			

Please refer to notes at end of table.

Table 16
 Vector 2.14 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092810-2-2.14-5-01-FS			092810-2-2.14-10-02-FS			092810-2-2.14-20-04-FS			092810-2-2.14-25-05-FS			092810-2-2.14-25-06-DUP			JSCS Screening Levels			
				Date			9/28/2010			9/28/2010			9/28/2010			9/28/2010				9/28/2010		
				Depth (Feet Below Ground Surface)			0 - 5			5 - 10			15 - 20			20 - 25				20 - 25		
				Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc		Result	Flag	Exceedanc
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	15.3	U		34.4	U		17.8	UJ		92.7	U		16.9	U		330			
	Butyl benzyl phthalate	µg/kg	EPA 8270M	15.3	U		34.4	U		17.8	UJ		92.7	U		16.9	U		--			
	Diethyl phthalate	µg/kg	EPA 8270M	15.3	U		34.4	U		17.8	UJ		92.7	U		16.9	U		600			
	Dimethyl phthalate	µg/kg	EPA 8270M	15.3	U		34.4	U		17.8	UJ		92.7	U		16.9	U		--			
	Di-n-butyl phthalate	µg/kg	EPA 8270M	15.3	U		47.9	J		17.8	UJ		92.7	U	1.5	78.8		1.3	60			
	Di-n-octyl phthalate	µg/kg	EPA 8270M	15.3	U		34.4	U		17.8	UJ		92.7	U		16.9	U		--			
Organotins	Dibutyltin	µg/kg	PSEP	0.47	U		0.49	U		0.51	UJ		0.52	U		0.52	U		--			
	Monobutyltin	µg/kg	PSEP	0.45	U		0.46	U		0.49	UJ		0.50	U		0.50	U		--			
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.4	U		1.5	UJ		1.5	U		1.5	U		--			
	Tributyltin	µg/kg	PSEP	1.0	U		1.0	U		1.1	UJ		1.1	U		1.1	U		2.3			
Petroleum	Diesel	mg/kg	NWTPH-Dx	1.04	J		25.6			4.32	J		95.5	J		42.9	J		--			
Hydrocarbons	Heavy Oil	mg/kg	NWTPH-Dx	1.95	J		151			22.4	J		921	J		115	J		--			

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U= Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 17
 Vector 2.15 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092810-2-2.15-5-01-FS			92810-2-2.15-10-02-FS			092810-2-2.15-20-04-FS			JSCS Screening Levels			
				Date			9/28/2010			9/28/2010				9/28/2010		
				Depth (Feet Below Ground Surface)			0 - 5			5 - 10				15 - 20		
				Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc				
Inorganics	Mercury	mg/kg	EPA 7471A	0.0304	J		0.132		1.9	0.0894	J	1.3	0.07			
	Arsenic	mg/kg	EPA 6020	5.59			4.39			3.17	J		7			
	Barium	mg/kg	EPA 6020	124			135			132	J		--			
	Chromium	mg/kg	EPA 6020	46.2			42.8			24.9	J		111			
	Copper	mg/kg	EPA 6020	48.8			27.1			25.1	J		149			
	Lead	mg/kg	EPA 6020	32.8		1.9	26.6		1.6	13.2	J		17			
	Manganese	mg/kg	EPA 6020	9,000		8.2	969			468			1,100			
	Nickel	mg/kg	EPA 6020	20.0			51.6		1.1	21.9	J		48.6			
	Selenium	mg/kg	EPA 6020	0.0122	U		0.0139	U		0.589	J		2.0			
	Silver	mg/kg	EPA 6020	0.183	J		0.174	J		0.295	J		5			
	Zinc	mg/kg	EPA 6020	83.8			88.4			91.0			459			
PCBs	Aroclor 1016	µg/kg	EPA 8082	2.03	U		2.36	U		2.23	U		530			
	Aroclor 1221	µg/kg	EPA 8082	4.04	U		4.71	U		4.44	U		--			
	Aroclor 1232	µg/kg	EPA 8082	2.03	U		2.36	U		2.23	U		--			
	Aroclor 1242	µg/kg	EPA 8082	2.03	U		2.36	U		2.23	U		--			
	Aroclor 1248	µg/kg	EPA 8082	20.2			15.9			2.23	U		1,500			
	Aroclor 1254	µg/kg	EPA 8082	2.03	U		2.36	U		2.93	J		300			
	Aroclor 1260	µg/kg	EPA 8082	2.03	U		2.36	U		2.23	U		200			
	Aroclor 1262	µg/kg	EPA 8082	2.03	U		2.36	U		2.23	U		--			
	Aroclor 1268	µg/kg	EPA 8082	2.03	U		2.36	U		2.23	U		--			
Total PCBs	µg/kg	EPA 8082	20.2		51.8	15.9		40.8	2.93	J	7.5	0.39				
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	59.6			13.0	J		4.38	U		200			
	Acenaphthene	µg/kg	EPA 8270M	27.6			14.0	J		10.8	J		300			
	Acenaphthylene	µg/kg	EPA 8270M	6.82	J		4.98	J		5.17	J		200			
	Anthracene	µg/kg	EPA 8270M	15.6	J		8.62	J		4.38	U		845			
	Benzo(a)anthracene	µg/kg	EPA 8270M	27.8			11.6	J		7.38	J		1050			
	Benzo(a)pyrene	µg/kg	EPA 8270M	27.1			14.3	J		10.6	J		1450			
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	24.8			12.7	J		7.04	J		--			
	Benzo(ghi)perylene	µg/kg	EPA 8270M	18.5			11.7	J		8.78	J		300			
	Benzo(k)fluranthene	µg/kg	EPA 8270M	20.8			10.5	J		7.93	J		13000			
	Chrysene	µg/kg	EPA 8270M	34.9			18.7	J		9.35	J		1290			
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	5.08	J		4.64	U		4.38	U		1300			
	Fluoranthene	µg/kg	EPA 8270M	70.4			32.1			19.6			2230			
	Fluorene	µg/kg	EPA 8270M	31.0			8.14	J		4.38	U		536			
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	14.8	J		8.57	J		6.50	J		100			
	Naphthalene	µg/kg	EPA 8270M	84.6			26.4			17.0	J		561			
	Phenanthrene	µg/kg	EPA 8270M	98.8			35.0			15.8	J		1170			
Pyrene	µg/kg	EPA 8270M	68.3			36.9			28.0			1520				

Please refer to notes at end of table.

Table 17
 Vector 2.15 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	092810-2-2.15-5-01-FS			92810-2-2.15-10-02-FS			092810-2-2.15-20-04-FS			JSCS Screening Levels			
				Date			9/28/2010			9/28/2010				9/28/2010		
				Depth (Feet Below Ground Surface)			0 - 5			5 - 10				15 - 20		
				Result	Flag	Exceedanc	Result	Flag	Exceedanc	Result	Flag	Exceedanc				
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	31.0	J		21.4	J		17.8	U		330			
	Butyl benzyl phthalate	µg/kg	EPA 8270M	16.1	U		18.8	U		17.8	U		--			
	Diethyl phthalate	µg/kg	EPA 8270M	16.1	U		18.8	U		17.8	U		600			
	Dimethyl phthalate	µg/kg	EPA 8270M	16.1	U		18.8	U		17.8	U		--			
	Di-n-butyl phthalate	µg/kg	EPA 8270M	16.1	U		18.8	U		17.8	U		60			
	Di-n-octyl phthalate	µg/kg	EPA 8270M	16.1	U		18.8	U		17.8	U		--			
Organotins	Dibutyltin	µg/kg	PSEP	0.49	U		0.54	U		0.55	UJ		--			
	Monobutyltin	µg/kg	PSEP	0.47	U		0.51	U		0.52	UJ		--			
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.6	U		1.6	UJ		--			
	Tributyltin	µg/kg	PSEP	1.1	U		1.2	U		1.2	UJ		2.3			
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	165			85.3			30.6	J		--			
	Heavy Oil	mg/kg	NWTPH-Dx	557			244			64.6	J		--			

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U= Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 18
 Vector 2.16 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	091010-2-2.16-1.5-01-FS			091010-2-2.16-10-03-FS			091010-2-2.16-15-04-FS			091010-2-2.16-15-05-DUP			JSCS Screening Levels			
				Date			9/10/2010			9/10/2010			9/10/2010				9/10/2010		
				Depth (Feet Below Ground Surface)			0 - 1.5			10 - 15			15 - 20				15 - 20		
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		Result	Flag	Exceedance
Inorganics	Mercury	mg/kg	EPA 7471A	0.0207	J		0.0781	J	1.1	0.0305	J		0.0411	J		0.07			
	Arsenic	mg/kg	EPA 6020	9.97		1.4	4.26			2.50			2.66			7			
	Barium	mg/kg	EPA 6020	172			124			95.7			126			--			
	Chromium	mg/kg	EPA 6020	32.4			29.2			17.5			21.3			111			
	Copper	mg/kg	EPA 6020	113			48.5			20.8			19.5			149			
	Lead	mg/kg	EPA 6020	145		8.5	20.5		1.2	4.97	J		10.9	J		17			
	Manganese	mg/kg	EPA 6020	1,020			386			307			352			1,100			
	Nickel	mg/kg	EPA 6020	42.1			23.3			19.2			22.5			48.6			
	Selenium	mg/kg	EPA 6020	0.160	J		0.0997	J		0.0830	J		0.0781	J		2.0			
	Silver	mg/kg	EPA 6020	0.405	J		0.206	J		0.0702	J		0.0976	J		5			
	Zinc	mg/kg	EPA 6020	332			101			51.4			58.8			459			
PCBs	Aroclor 1016	µg/kg	EPA 8082	1.92	U		2.20	U		2.13	U		2.23	U		530			
	Aroclor 1221	µg/kg	EPA 8082	3.83	U		4.39	U		4.25	U		4.45	U		--			
	Aroclor 1232	µg/kg	EPA 8082	1.92	U		2.20	U		2.13	U		2.23	U		--			
	Aroclor 1242	µg/kg	EPA 8082	1.92	U		2.20	U		4.29	U		2.23	U		--			
	Aroclor 1248	µg/kg	EPA 8082	21.8			2.20	U		2.13	U		2.23	U		1,500			
	Aroclor 1254	µg/kg	EPA 8082	1.92	U		2.20	U		2.13	U		2.23	U		300			
	Aroclor 1260	µg/kg	EPA 8082	4.97			5.84			2.13	U		2.23	U		200			
	Aroclor 1262	µg/kg	EPA 8082	1.92	U		2.20	U		2.13	U		2.23	U		--			
	Aroclor 1268	µg/kg	EPA 8082	1.92	U		2.20	U		2.13	U		2.23	U		--			
	Total PCBs	µg/kg	EPA 8082	26.8		68.7	5.84		15.0	4.29		11.0	22.3	U	57.2	0.39			
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	163			11.0	J		4.21	U		4.41	U		200			
	Acenaphthene	µg/kg	EPA 8270M	42.3			22.1			22.4			28.3			300			
	Acenaphthylene	µg/kg	EPA 8270M	83.4			13.1	J		4.21	U		4.41	U		200			
	Anthracene	µg/kg	EPA 8270M	147			19.5			4.21	U		4.41	U		845			
	Benzo(a)anthracene	µg/kg	EPA 8270M	185			32.7			6.35	J		5.24	J		1050			
	Benzo(a)pyrene	µg/kg	EPA 8270M	208			43.3			6.95	J		9.29	J		1450			
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	136			31.6			4.97	J		6.55	J		--			
	Benzo(ghi)perylene	µg/kg	EPA 8270M	138			38.3			5.90	J		9.58	J		300			
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	121			27.7			5.20	J		5.57	J		13000			
	Chrysene	µg/kg	EPA 8270M	287			47.9			8.28	J		7.02	J		1290			
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	46.5			7.27	J		4.21	U		4.41	U		1300			
	Fluoranthene	µg/kg	EPA 8270M	352			78.4			13.1	J		8.51	J		2230			
	Fluorene	µg/kg	EPA 8270M	135			12.4	J		4.21	U		4.41	U		536			
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	95.0			26.8			4.21	U		6.60	J		100			
	Naphthalene	µg/kg	EPA 8270M	292			31.4			10.6	J		7.51	J		561			
	Phenanthrene	µg/kg	EPA 8270M	591			73.1			12.2	J		14.1	J		1170			
	Pyrene	µg/kg	EPA 8270M	437			92.7			19.2			17.2	J		1520			

Please refer to notes at end of table.

Table 18
 Vector 2.16 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	091010-2-2.16-1.5-01-FS			091010-2-2.16-10-03-FS			091010-2-2.16-15-04-FS			091010-2-2.16-15-05-DUP			JSCS Screening Levels			
				Date			9/10/2010			9/10/2010			9/10/2010				9/10/2010		
				Depth (Feet Below Ground Surface)			0 - 1.5			10 - 15			15 - 20				15 - 20		
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		Result	Flag	Exceedance
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	52.8			223			17.1	U		17.9	U		330			
	Butyl benzyl phthalate	µg/kg	EPA 8270M	15.3	U		17.7	U		17.1	U		17.9	U		--			
	Diethyl phthalate	µg/kg	EPA 8270M	15.3	U		17.7	U		17.1	U		17.9	U		600			
	Dimethyl phthalate	µg/kg	EPA 8270M	15.3	U		17.7	U		17.1	U		17.9	U		--			
	Di-n-butyl phthalate	µg/kg	EPA 8270M	15.3	U		17.7	U		17.1	U		17.9	U		60			
	Di-n-octyl phthalate	µg/kg	EPA 8270M	15.3	U		17.7	U		17.1	U		17.9	U		--			
Organotins	Dibutyltin	µg/kg	PSEP	0.48	U		0.54	U		0.55	U		0.54	U		--			
	Monobutyltin	µg/kg	PSEP	0.46	U		0.51	U		0.53	U		0.51	U		--			
	Tetra-n-butyltin	µg/kg	PSEP	1.4	U		1.6	U		1.6	U		1.6	U		--			
	Tributyltin	µg/kg	PSEP	1.0	U		1.2	U		1.2	U		1.2	U		2.3			
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	170	J		39.5			16.3			3.71	J		--			
	Heavy Oil	mg/kg	NWTPH-Dx	454	J		134			64.6			21.1	J		--			

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U= Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluation.

Table 19
 Vector 2.17 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	091010-2-2.17-1.5-01-FS			091010-2-2.17-10-03-FS			091010-2-2.17-15-04-FS			091010-2-2.17-15-05-DUP			091010-2-2.17-30-08-FS			JSCS Screening Levels			
				Date			9/10/2010			9/10/2010			9/10/2010			9/10/2010				9/10/2010		
				Depth (Feet Below Ground Surface)			0 - 1.5			10 - 15			15 - 20			15 - 20				30 - 35		
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		Result	Flag	Exceedance
Inorganics	Mercury	mg/kg	EPA 7471A	0.126		1.8	0.0726	J	1.0	0.0636	J		0.0191	J		0.0275	J		0.07			
	Arsenic	mg/kg	EPA 6020	7.70		1.1	6.84			2.68			2.30			3.91			7			
	Barium	mg/kg	EPA 6020	174			186			96.5			69.6			80.0			--			
	Chromium	mg/kg	EPA 6020	23.1			31.2			21.6	J		14.3	J		16.0			111			
	Copper	mg/kg	EPA 6020	101			31.4			19.8			13.8			15.8			149			
	Lead	mg/kg	EPA 6020	142		8.4	71.9		4.2	10.6	J		4.42	J		4.40			17			
	Manganese	mg/kg	EPA 6020	688			666			308			233			308			1,100			
	Nickel	mg/kg	EPA 6020	33.9			19.9			21.9			15.5			17.1			48.6			
	Selenium	mg/kg	EPA 6020	0.155	J		0.199	J		0.0907	J		0.0464	J		0.0660	J		2.0			
	Silver	mg/kg	EPA 6020	0.239	J		0.150	J		0.0907	J		0.0521	J		0.0528	J		5			
Zinc	mg/kg	EPA 6020	188			125			62.1			44.3			62.4			459				
PCBs	Aroclor 1016	µg/kg	EPA 8082	2.01	U		2.17	U		2.25	U		2.01	U		2.22	U		530			
	Aroclor 1221	µg/kg	EPA 8082	4.00	U		4.33	U		4.50	U		4.00	U		4.43	U		--			
	Aroclor 1232	µg/kg	EPA 8082	2.01	U		2.17	U		2.25	U		2.01	U		2.22	U		--			
	Aroclor 1242	µg/kg	EPA 8082	2.01	U		2.17	U		2.25	U		2.01	U		2.22	U		--			
	Aroclor 1248	µg/kg	EPA 8082	2.01	U		2.17	U		2.25	U		2.01	U		2.22	U		1,500			
	Aroclor 1254	µg/kg	EPA 8082	15.2			6.59			2.25	U		2.01	U		2.22	U		300			
	Aroclor 1260	µg/kg	EPA 8082	2.01	U		2.17	U		2.25	U		2.01	U		2.22	U		200			
	Aroclor 1262	µg/kg	EPA 8082	2.01	U		2.17	U		2.25	U		2.01	U		2.22	U		--			
	Aroclor 1268	µg/kg	EPA 8082	2.01	U		2.17	U		2.25	U		2.01	U		2.22	U		--			
Total PCBs	µg/kg	EPA 8082	15.2		39.0	6.59		16.9	22.5	U		20.1	U		22.2	U		0.39				
SVOCs	1,2,4-Trichlorobenzene	µg/kg	EPA 8270C	1,200	U		647	U		670	U		602	U		657	U		--			
	1,2-Dichlorobenzene	µg/kg	EPA 8270C	1,200	U		647	U		670	U		602	U		657	U		1,700			
	1,3-Dichlorobenzene	µg/kg	EPA 8270C	168	U		647	U		670	U		602	U		657	U		300			
	1,4-Dichlorobenzene	µg/kg	EPA 8270C	168	U		647	U		670	U		602	U		657	U		300			
	2,4,5-Trichlorophenol	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	2,4,6-Trichlorophenol	µg/kg	EPA 8270C	1,200	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	2,4-Dichlorophenol	µg/kg	EPA 8270C	4,810	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	2,4-Dimethylphenol	µg/kg	EPA 8270C	1,200	U		647	U		670	U		602	U		657	U		--			
	2,4-Dinitrophenol	µg/kg	EPA 8270C	1,200	U		647	U		2,680	U		2,410	U		2,630	U		--			
	2,4-Dinitrotoluene	µg/kg	EPA 8270C	168	U		647	U		670	U		602	U		657	U		--			
	2,6-Dinitrotoluene	µg/kg	EPA 8270C	168	U		647	U		670	U		602	U		657	U		--			
	2-Chloronaphthalene	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	2-Chlorophenol	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	2-Methylphenol	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	2-Nitroaniline	µg/kg	EPA 8270C	1,200	U		647	U		93.9	U		84.2	U		92.0	U		--			
	2-Nitrophenol	µg/kg	EPA 8270C	168	U		2,590	U		93.9	U		84.2	U		92.0	U		--			
	3,3'-Dichlorobenzidine	µg/kg	EPA 8270C	1,200	U		647	U		670	U		602	U		657	U		--			
	3,4-Methylphenol	µg/kg	EPA 8270C	1,200	U		647	U		93.9	U		84.2	U		92.0	U		--			
3-Nitroaniline	µg/kg	EPA 8270C	168	U		90.6	U		670	U		602	U		657	U		--				
4,6-Dinitro-2-methylphenol	µg/kg	EPA 8270C	168	U		90.6	U		670	U		602	U		657	U		--				

Please refer to notes at end of table.

Table 19
 Vector 2.17 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	091010-2-2.17-1.5-01-FS			091010-2-2.17-10-03-FS			091010-2-2.17-15-04-FS			091010-2-2.17-15-05-DUP			091010-2-2.17-30-08-FS			JSCS Screening Levels			
				Date			9/10/2010			9/10/2010			9/10/2010			9/10/2010				9/10/2010		
				Depth (Feet Below Ground Surface)			0 - 1.5			10 - 15			15 - 20			15 - 20				30 - 35		
				Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		Result	Flag	Exceedance
SVOCs (continued)	4-Bromophenyl phenyl ether	µg/kg	EPA 8270C	397	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	4-Chloro-3-methylphenol	µg/kg	EPA 8270C	241	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	4-Chloroaniline	µg/kg	EPA 8270C	168	U		90.6	U		221	U		199	U		217	U		--			
	4-Chlorophenyl phenyl ether	µg/kg	EPA 8270C	1,200	U		647	U		134	U		120	U		131	U		--			
	4-Nitroaniline	µg/kg	EPA 8270C	1,200	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	4-Nitrophenol	µg/kg	EPA 8270C	2,410	U		647	U		670	U		602	U		657	U		--			
	Benzoic Acid	µg/kg	EPA 8270C	168	U		647	U		670	U		602	U		657	U		--			
	Benzyl Alcohol	µg/kg	EPA 8270C	168	U		90.6	U		1,340	U		1,200	U		1,310	U		--			
	Bis(2-chloroethoxy)methane	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	Bis(2-chloroethyl)ether	µg/kg	EPA 8270C	168	U		213	U		93.9	U		84.2	U		92.0	U		--			
	Bis(2-chloroisopropyl)ether	µg/kg	EPA 8270C	168	U		129	U		93.9	U		84.2	U		92.0	U		--			
	Dibenzofuran	µg/kg	EPA 8270C	1,200	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	Hexachlorobenzene	µg/kg	EPA 8270C	1,200	U		647	U		93.9	U		84.2	U		92.0	U		19			
	Hexachlorobutadiene	µg/kg	EPA 8270C	1,200	U		647	U		670	U		602	U		657	U		600			
	Hexachlorocyclopentadiene	µg/kg	EPA 8270C	168	U		1,290	U		670	U		602	U		657	U		400			
	Hexachloroethane	µg/kg	EPA 8270C	168	U		90.6	U		670	U		602	U		657	U		--			
	Isophorone	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	Nitrobenzene	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	N-Nitrosodi-n-propylamine	µg/kg	EPA 8270C	1,200	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
	N-Nitrosodiphenylamine	µg/kg	EPA 8270C	168	U		90.6	U		93.9	U		84.2	U		92.0	U		--			
Pentachlorophenol	µg/kg	EPA 8270C	1,200	U		647	U		670	U		602	U		657	U		250				
Phenol	µg/kg	EPA 8270C	168	U		647	U		93.9	U		84.2	U		92.0	U		50				
PAHs	2-Methylnaphthalene	µg/kg	EPA 8270M	41.8			647.0	J	3.2	4.48	U		3.96	U		22.3			200			
	Acenaphthene	µg/kg	EPA 8270M	100			90.60	J		16.0	J		45.2			56.9			300			
	Acenaphthylene	µg/kg	EPA 8270M	27.7			90.60	U		4.48	U		3.96	U		14.8	J		200			
	Anthracene	µg/kg	EPA 8270M	128			90.60	J		4.48	U		3.96	U		35.4			845			
	Benzo(a)anthracene	µg/kg	EPA 8270M	176			90.6	J		4.80	J		4.92	J		90.8			1050			
	Benzo(a)pyrene	µg/kg	EPA 8270M	162			647.0			5.12	J		5.86	J		74.9			1450			
	Benzo(b)fluoranthene	µg/kg	EPA 8270M	154			90.6	U		4.48	U		3.96	U		47.4			--			
	Benzo(ghi)perylene	µg/kg	EPA 8270M	147			23.1			4.48	U		4.61	J		37.2			300			
	Benzo(k)fluoranthene	µg/kg	EPA 8270M	145			17.7			4.48	U		4.28	J		61.7			13000			
	Chrysene	µg/kg	EPA 8270M	227			25.7			4.96	J		5.92	J		81.5			1290			
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	33.0			4.47	J		4.48	U		3.96	U		9.12	J		1300			
	Fluoranthene	µg/kg	EPA 8270M	551			43.2			7.77	J		9.90	J		122			2230			
	Fluorene	µg/kg	EPA 8270M	69.2			5.99	J		4.48	U		3.96	U		18.1			536			
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	122		1.2	17.2	J		4.48	U		3.96	U		35.3			100			
	Naphthalene	µg/kg	EPA 8270M	104			29.6			7.5	J		11.3	J		84.1			561			
	Phenanthrene	µg/kg	EPA 8270M	290			40.9			6.25	J		10.7	J		236			1170			
Pyrene	µg/kg	EPA 8270M	485			41.8			10.7	J		16.4			267	J		1520				
Phthalates	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	16.0	U		245			18.2	U		16.1	U		17.8	U		330			
	Butyl benzyl phthalate	µg/kg	EPA 8270M	16.0	U		17.4	U		18.2	U		16.1	U		17.8	U		--			
	Diethyl phthalate	µg/kg	EPA 8270M	16.0	U		17.4	U		18.2	U		16.1	U		17.8	U		600			
	Dimethyl phthalate	µg/kg	EPA 8270M	16.0	U		17.4	U		18.2	U		16.1	U		17.8	U		--			
	Di-n-butyl phthalate	µg/kg	EPA 8270M	16.0	U		17.4	U		18.2	U		16.1	U		17.8	U		60			
	Di-n-octyl phthalate	µg/kg	EPA 8270M	16.0	U		17.4	U		18.2	U		16.1	U		17.8	U		--			

Please refer to notes at end of table.

Table 19
 Vector 2.17 Soil Results
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	091010-2-2.17-1.5-01-FS			091010-2-2.17-10-03-FS			091010-2-2.17-15-04-FS			091010-2-2.17-15-05-DUP			091010-2-2.17-30-08-FS			JSCS Screening Levels			
				Date			9/10/2010			9/10/2010			9/10/2010			9/10/2010				9/10/2010		
				Depth (Feet Below Ground Surface)			0 - 1.5			10 - 15			15 - 20			15 - 20				30 - 35		
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Organotins	Dibutyltin	µg/kg	PSEP	0.51	U		0.51	U		0.60	U		0.51	U		0.51	U		--			
	Monobutyltin	µg/kg	PSEP	0.49	U		0.49	U		0.57	U		0.49	U		0.48	U		--			
	Tetra-n-butyltin	µg/kg	PSEP	1.5	U		1.5	U		1.8	U		1.5	U		1.5	U		--			
	Tributyltin	µg/kg	PSEP	1.1	U		1.1	U		1.3	U		1.1	U		1.1	U		2.3			
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	61.4			6.47	J		6.03	J		28.5			17.1			--			
	Heavy Oil	mg/kg	NWTPH-Dx	121			21.7	J		15.7	J		59.2			14.4	J		--			

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- J = The result is an estimated quantity.
- U= Undetected at the method detection limit shown
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07
- SLV = Screening Level Value.
- Gray shading indicates sample was collected at a location not reasonable likely to erode to the river. Data were not used for the source control evaluator

Table 20
 Riverbank Surface Sample Results - Locations S2-1 Through S2-12
 Area 2 Supplemental Riverbank Source Control Evaluation
 Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	S2-1			S2-2			S2-3			S2-4			S2-5			S2-6			S2-7			S2-8			S2-9			S2-10			S2-11			S2-12			JCS Screening Levels
				Date			9/24/2010			9/24/2010			9/24/2010			9/24/2010			9/24/2010			9/24/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			
				Depth (Feet Below Ground Surface)			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	
Inorganics	Mercury	µg/kg	EPA 7471A	0.0825	J	1.2	0.409		5.8	0.0285	J	9.7	0.00500	U		0.0100	J		0.0137	J		0.123		1.8	0.0509	J		0.0537	J		0.0218	J	3.3	0.0214	J	4.2	0.00880	J	2.7	0.07
	Arsenic	µg/kg	EPA 6020	19.9		2.8	580		82.9	68.1			2.25	J		3.51		4.01	135	19.3	5.85	6.27	23			6.27	J		23	J	29.1	19.0	7							
	Barium	µg/kg	EPA 6020	214			323			149			160			173		173	586	197	235	629			28.7			235		398		47.0	111							
	Chromium	µg/kg	EPA 6020	28.7			129		1.2	27.9			4.94	J		19.0		20.5	207	1.9	20.3	28.7						84.2		84.2		84.2								
	Copper	µg/kg	EPA 6020	75.1			1,350		9.1	138			26.9			76.4	1.3	1,580	10.6	112	260	1.7						1,220	8.2	1,130		832	5.6	149						
	Lead	µg/kg	EPA 6020	140		8.2	1,490		87.6	125		7.4	20.3		1.2	7.13		31.2	1.8	563	33.1	56.3	3.3				65.4	3.8	1,260	74.1	14.2	39.1	2.3	17						
	Manganese	µg/kg	EPA 6020	1,130		1.0	1,090			381			1,400	1.3	1,120	1.0	3,080	2.8	1,270	1.2	1,360	1.7						2,110	1.9	1,660		1.5	1,100							
	Nickel	µg/kg	EPA 6020	23.4			75.7		1.6	19.8			3.70	J	11.1		12.0		95	2.0	13.9	22.7						52	1.1	42.6	26.9	48.6								
	Selenium	µg/kg	EPA 6020	0.134	J		0.583	J		0.0759	J		0.0289	J	0.0303	J	0.0641	J	0.658	J	0.0886	J	0.173	J				0.0522	U	0.274	J	0.274	J	0.159	J	2.0				
	Silver	µg/kg	EPA 6020	0.256	J		2.330	J		0.314	J		0.0866	J	0.212	J	0.256	J	1.18	0.325	J	0.675	1.1						1.1		0.718	5								
	Zinc	µg/kg	EPA 6020	312			5,730		12.5	604		1.3	99.8			265		650	1.4	3,900	8.5	300	767				1.7	16.2	764	1.7	494		1.1	459						
	PCBs	Aroclor 1016	µg/kg	EPA 8082	2.03	U		7.75	U		1.81	U		1.92	U		2.02	U	2.14	U	1.96	U						1.92	U	4.35	U	1.81	U	1.77	U	530				
		Aroclor 1221	µg/kg	EPA 8082	4.05	U		15.5	U		3.60	U		3.83	U		4.03	U	4.27	U	3.91	U						3.82	U	8.66	U	3.62	U	3.54	U					
Aroclor 1232		µg/kg	EPA 8082	2.03	U		7.75	U		1.81	U		1.92	U		2.02	U	2.14	U	1.96	U						1.92	U	4.35	U	1.81	U	1.77	U						
Aroclor 1242		µg/kg	EPA 8082	2.03	U		7.75	U		1.81	U		1.92	U		2.02	U	2.14	U	1.96	U						1.92	U	4.35	U	1.81	U	1.77	U						
Aroclor 1248		µg/kg	EPA 8082	2.03	U		7.75	U		1.81	U		1.92	U		2.02	U	2.14	U	1.96	U						1.92	U	4.35	U	1.81	U	1.77	U			1,500			
Aroclor 1254		µg/kg	EPA 8082	2.03	U		7.75	U		1.81	U		1.92	U		2.02	U	2.14	U	1.96	U						1.92	U	88.2	U	18.1	U	1.77	U	300					
Aroclor 1260		µg/kg	EPA 8082	7.07			49.0			3.32	J		1.92	U		3.10	J	8.76		9.97	UJ						8.57	U	4.35	U	18.2	J	12.9	J	200					
Aroclor 1262		µg/kg	EPA 8082	2.03	U		7.75	U		1.81	U		1.92	U		2.02	U	2.14	U	1.96	U						1.92	U	4.35	U	1.81	U	1.77	U						
Aroclor 1268		µg/kg	EPA 8082	2.03	U		7.75	U		1.81	U		1.92	U		2.02	U	2.14	U	1.96	U						1.92	U	4.35	U	1.81	U	1.77	U						
Total PCBs		µg/kg	EPA 8082	7.07		18.1	49.0		125.6	3.32	J	8.5	19.2	49.2	3.10	J	7.9	8.76	22.5	123	315.4	58.0	148.7	8.57			22.0	88.2	226.2	33.6	86.2	12.9	33.1	0.39						
VOCs		1,1,1,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--		--			10.6	U		11.2	U	11.8	U	--			--					--		--		--		--		--				
	1,1,1-Trichloroethane	µg/kg	EPA 8260B	--			--		--			5.71	U		6.06	U	6.38	U	--			--					--		--		--		--		--					
	1,1,2,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--		--			12.9	U		13.7	U	14.4	U	--			--					--		--		--		--		--					
	1,1,2-Trichloroethane	µg/kg	EPA 8260B	--			--		--			7.69	U		8.16	U	8.60	U	--			--						--		--		--		--		--				
	1,1-Dichloroethane	µg/kg	EPA 8260B	--			--		--			7.61	U		8.07	U	8.51	U	--			--						--		--		--		--		--				
	1,1-Dichloroethene	µg/kg	EPA 8260B	--			--		--			13.6	U		14.4	U	15.2	U	--			--						--		--		--		--		--				
	1,1-Dichloropropene	µg/kg	EPA 8260B	--			--		--			8.96	U		9.50	U	10.0	U	--			--						--		--		--		--		--				
	1,2,3-Trichlorobenzene	µg/kg	EPA 8260B	--			--		--			10.6	U		11.3	U	11.9	U	--			--						--		--		--		--		--				
	1,2,3-Trichloropropane	µg/kg	EPA 8260B	--			--		--			7.33	U		7.77	U	8.19	U	--			--						--		--		--		--		--				
	1,2,4-Trichlorobenzene	µg/kg	EPA 8260B	--			--		--			15.7	U		16.7	U	17.6	U	--			--						--		--		--		--		--		9,200		
	1,2,4-Trimethylbenzene	µg/kg	EPA 8260B	--			--		--			16.8	U		17.8	U	18.7	U	--			--						--		--		--		--		--				
	1,2-Dibromo-3-chloropropane	µg/kg	EPA 8260B	--			--		--			46.8	U		49.6	U	52.3	U	--			--						--		--		--		--		--				
	1,2-Dibromoethane	µg/kg	EPA 8260B	--			--		--			11.8	U		12.5	U	13.2	U	--			--						--		--		--		--		--				
	1,2-Dichlorobenzene	µg/kg	EPA 8260B	--			--		--			8.82	U		9.36	U	9.86	U	--			--						--		--		--		--		--		1,700		
	1,2-Dichloroethane	µg/kg	EPA 8260B	--			--		--			8.58	U		9.11	U	9.60	U	--			--						--		--		--		--		--				
	1,2-Dichloropropane	µg/kg	EPA 8260B	--			--		--			7.61	U		8.07	U	8.51	U	--			--						--		--		--		--		--				
	1,3,5-Trimethylbenzene	µg/kg	EPA 8260B	--			--		--			9.28	U		9.85	U	10.4	U	--			--						--		--		--		--		--				
	1,3-Dichlorobenzene	µg/kg	EPA 8260B	--			--		--			7.08	U		7.51	U	7.91	U	--			--						--		--		--		--		--		300		
	1,3-Dichloropropane	µg/kg	EPA 8260B	--			--		--			7.53	U		7.99	U	8.42	U	--			--						--		--		--		--		--				
	1,4-Dichlorobenzene	µg/kg	EPA 8260B	--			--		--			9.58	U		10.2	U	10.7	U	--			--						--		--		--		--		--		300		
	2,2-Dichloropropane	µg/kg	EPA 8260B	--			--		--			7.12	U		7.56	U	7.96	U	--			--						--		--		--		--		--				
	2-Butanone	µg/kg	EPA 8260B	--																																				

Table 20

Riverbank Surface Sample Results - Locations S2-1 Through S2-12
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	S2-1		S2-2		S2-3		S2-4		S2-5		S2-6		S2-7		S2-8		S2-9		S2-10		S2-11		S2-12		JCS Screening Levels		
				Date		Date		Date		Date		Date		Date		Date		Date		Date		Date		Date		Date			Date	
				Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		Result	Flag
VOCs (continued)	tert-Butylbenzene	µg/kq	EPA 8260B	--		--		--		11.1	U	11.7	U	12.4	U	--		--		--		--		--		--		--		
	Tetrachloroethene	µg/kq	EPA 8260B	--		--		--		16.3	U	17.3	U	18.2	U	--		--		--		--		--		--		--		
	Toluene	µg/kq	EPA 8260B	--		--		--		3.96	U	4.21	U	4.43	U	--		--		--		--		--		--		--		
	trans-1,2-Dichloroethene	µg/kq	EPA 8260B	--		--		--		6.64	U	7.04	U	7.42	U	--		--		--		--		--		--		--		
	trans-1,3-Dichloropropene	µg/kq	EPA 8260B	--		--		--		6.64	U	7.04	U	7.42	U	--		--		--		--		--		--		--		
	Trichloroethene	µg/kq	EPA 8260B	--		--		--		8.22	U	8.72	U	9.19	U	--		--		--		--		--		--		--		
	Trichlorofluoromethane	µg/kq	EPA 8260B	--		--		--		35.2	U	37.4	U	39.4	U	--		--		--		--		--		--		--		
	Vinyl chloride	µg/kq	EPA 8260B	--		--		--		8.47	UJ	8.99	UJ	9.47	UJ	--		--		--		--		--		--		--		
	SVOCs	1,2,4-Trichlorobenzene	µg/kq	EPA 8270C	--		--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--	
1,2-Dichlorobenzene		µg/kq	EPA 8270C	--		--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		
1,3-Dichlorobenzene		µg/kq	EPA 8270C	--		--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		
1,4-Dichlorobenzene		µg/kq	EPA 8270C	--		--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		
2,4,5-Trichlorophenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
2,4,6-Trichlorophenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
2,4-Dichlorophenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
2,4-Dimethylphenol		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
2,4-Dinitrophenol		µg/kq	EPA 8270C	--		--		--		--		4,780	U	2,340	U	2,280	U	--		--		--		--		--		--		
2,4-Dinitrotoluene		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
2,6-Dinitrotoluene		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
2-Chloronaphthalene		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
2-Chlorophenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
2-Methylphenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
2-Nitroaniline		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
2-Nitrophenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
3,3'-Dichlorobenzidine		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
3,4-Methylphenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
3-Nitroaniline		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
4,6-Dinitro-2-methylphenol		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
4-Bromophenyl phenyl ether		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
4-Chloro-3-methylphenol		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
4-Chloroaniline		µg/kq	EPA 8270C	--		--		--		--		394	U	193	U	188	U	--		--		--		--		--		--		
4-Chlorophenyl phenyl ether		µg/kq	EPA 8270C	--		--		--		--		239	U	117	U	114	U	--		--		--		--		--		--		
4-Nitroaniline		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
4-Nitrophenol		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
Benzoic Acid		µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--		
Benzyl Alcohol		µg/kq	EPA 8270C	--		--		--		--		2,390	U	1,170	U	1,140	U	--		--		--		--		--		--		
Bis(2-chloroethoxy)methane		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
Bis(2-chloroethyl)ether		µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--		
Bis(2-chloroisopropyl)ether	µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--			
Dibenzofuran	µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--			
Hexachlorobenzene	µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--			
Hexachlorobutadiene	µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--			
Hexachlorocyclopentadiene	µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--			
Hexachloroethane	µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--			
Isophorone	µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--			
Nitrobenzene	µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--			
N-Nitrosodi-n-propylamine	µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--			
N-Nitrosodiphenylamine	µg/kq	EPA 8270C	--		--		--		--		167	U	82.0	U	79.7	U	--		--		--		--		--		--			
Pentachlorophenol	µg/kq	EPA 8270C	--		--		--		--		1,190	U	585	U	570	U	--		--		--		--		--		--			
Phenol	µg/kq	EPA 8270C	--		--		--		--		167	U	82	U	79.7	U	--		--		--		--		--		--			
PAHs	2-Methylnaphthalene	µg/kq	EPA 8270M	7.93	U	20.9	J	4.62	J	3.77	U	3.95	U	7.29	J	46.3	J	8.65	J	4.23	J	22.2	J	112	J	36.9	J	200		
	Acenaphthene	µg/kq	EPA 8270M	7.93	U	49.5	J	13.2	J	3.77	U	3.95	U	5.66	J	33.1	J	4.42	J	3.79	U	24.1	J	162	J	34.7	J	300		
	Acenaphthylene	µg/kq	EPA 8270M	13.1	J	72.1	J	84.4	J	3.77	U	3.95	U	4.23	U	71.1	J	4.30	J	3.79	U	8.76	J	85.0	J	7.68	J	200		
	Anthracene	µg/kq	EPA 8270M	13.1	J	352	J	119	J	3.77	U	3.95	U	8.12	J	155	J	7.99	J	9.31	J	35.6	J	234	J	56.4	J	845		
	Benzo(a)anthracene	µg/kq	EPA 8270M	46.7	J	1,100	J	206	J	8.63	J	15.7	J	34.1	J	150	J	27.4	J	29.4	J	89.6	J	567	J	105	J	1050		
	Benzo(a)pyrene	µg/kq	EPA 8270M	62.8	J	1,440	J	330	J	11.9	J	22.2	J	47.4	J	296	J	41.3	J	53.4	J	124	J	683	J	110	J	1450		
	Benzo(b)fluoranthene	µg/kq	EPA 8270M	55.1	J	1,350	J	530	J	15.0	J	24.7	J	55.3	J	419	J	46.7	J	69.6	J	212	J	690	J	103	J	--		
	Benzo(g)hperylene	µg/kq	EPA 8270M	75.1	J	1,170	J	320	J	9.66	J	19.8	J	43.2	J	468	J	38.3	J	64.2	J	129	J	578	J	83.5	J	300		
	Benzo(k)fluoranthene	µg/kq	EPA 8270M	53.3	J	1,220	J	286	J	10.7	J	20.9	J	51.9	J	290	J	37.0	J	45.5	J	126	J	663	J	101	J	13000		
	Chrysene	µg/kq	EPA 8270M	57.0	J	1,310	J	327	J	16.7	J	23.5	J	56.5	J	239	J	54.8	J	50.0	J	146	J	940	J	132	J	1290		
	Dibenzo(a,h)anthracene	µg/kq	EPA 8270M	15.5	J	391	J	95.1	J	3.77	U	5.12	J	11.5	J	120	J	12.0	J	15.9	J	41.6	J	192	J	25.1	J	1300		
	Fluoranthene	µg/kq	EPA 8270M	90.3	J	1,890	J	369	J	25.7	J	35.8	J	117	J	308	J	67.0	J	75.7	J	217	J	2,650	J	329	J	2230		
	Fluorene	µg/kq	EPA 8270M	7.93	U	68.4	J	31.8	J	3.77	U	3.95	U	5.80	J	42.5	J	5.42	J	5.78	J	19.5	J	193	J	49.3	J	536		
	Indeno(1,2,3-cd)pyrene	µg/kq	EPA 8270M	53.7	J	1,070	J																							

Table 20
Riverbank Surface Sample Results - Locations S2-1 Through S2-12
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	S2-1			S2-2			S2-3			S2-4			S2-5			S2-6			S2-7			S2-8			S2-9			S2-10			S2-11			S2-12			JSCS Screening Levels
				Date			Date			Date			Date			Date			Date			Date			Date			Date			Date									
				9/24/2010			9/24/2010			9/24/2010			9/24/2010			9/24/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010						
Depth (Feet Below Ground Surface)				Surface			Surface			Surface			Surface			Surface			Surface			Surface			Surface			Surface			Surface									
				Result	Flag	Exceedance	Result	Flag	Exceedance																															
Organochlorine Pesticides	4,4'-DDD	µg/kg	EPA 8081A	--			--			--			--			--			1.60	U	4.8	--			--			--			--			--			--			0.33
	4,4'-DDE	µg/kg	EPA 8081A	--			--			--			--			0.787	U	2.4	--			--			--			--			--			--			--			0.33
	4,4'-DDT	µg/kg	EPA 8081A	--			--			--			--			4.79	U	14.5	--			--			--			--			--			--			--			0.33
	Aldrin	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			40
	alpha-BHC	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			--
	alpha-Chlordane	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			--
	beta-BHC	µg/kg	EPA 8081A	--			--			--			--			1.74	U		--			--			--			--			--			--			--			--
	Chlordane	µg/kg	EPA 8081A	--			--			--			--			17.9	U		--			--			--			--			--			--			--			0.37
	delta-BHC	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			--
	Dieldrin	µg/kg	EPA 8081A	--			--			--			--			3.20	U		--			--			--			--			--			--			--			0.0081
	Endosulfan I	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			--
	Endosulfan II	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			--
	Endosulfan sulfate	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			--
	Endrin	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			207
	Endrin aldehyde	µg/kg	EPA 8081A	--			--			--			--			1.60	U		--			--			--			--			--			--			--			--
	Endrin ketone	µg/kg	EPA 8081A	--			--			--			--			3.20	U		--			--			--			--			--			--			--			--
	gamma-BHC (Lindane)	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			4.99
	gamma-Chlordane	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			10
	Heptachlor	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			16
	Heptachlor epoxide	µg/kg	EPA 8081A	--			--			--			--			0.787	U		--			--			--			--			--			--			--			--
Methoxychlor	µg/kg	EPA 8081A	--			--			--			--			1.97	U		--			--			--			--			--			--			--			--	
Toxaphene	µg/kg	EPA 8081A	--			--			--			--			23.8	U		--			--			--			--			--			--			--			--	
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	18.4			143			4.61	J		1.04	J		1.87	J		8.85	J		76.8	J		1.63	J		29.5			22.6			22.0			6.24	J		--
	Heavy Oil	mg/kg	NWTPH-Dx	127			1,430			24.6	J		2.89	J		15.1	J		79.3	J		204	J		7.11	J		321			61.4			40.7			43.9			--

- Notes:
- = Not applicable/not analyzed.
 - mg/kg = Milligrams per kilogram.
 - µg/kg = Micrograms per kilogram.
 - J = The result is an estimated quantity.
 - U = Undetected at the method detection limit shown.
 - UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
 - JSCS Screening Level = Portland Harbor Joint Source Control Strategy: Table 3-1, revision date 7/16/07.
 - SLV = Screening Level Value.

Table 21
Riverbank Surface Sample Results - Locations S2-13 Through S2-25
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	S2-13			S2-14			S2-15			S2-16			S2-17			S2-18			S2-19			S2-20			S2-21			S2-22			S2-23			S2-24			S2-25			JSCS Screening Levels
				Date			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010			9/23/2010						
				Depth (Feet Below Ground Surface)			Surface																																				
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance					
Dioxins/Furans (continued)	Total HpCDD	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
	Total HpCDF	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
	Total HxCDD	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
	Total HxCDF	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
	Total PeCDD	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
	Total PeCDF	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
	Total TCDD	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
	Total TCDF	pg/g	EPA 8290	--			--			--			--			--			--			--			--			--			--			--			--						
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	51.5			7.84	J		138			5,080			1,360			87.7			119			202			189			97.4			48.8			374			9.89	J		--
	Heavy Oil	mg/kg	NWTPH-Dx	292			61.9			476			16,000			4,970			366			452			791			783			371			218			1,540			36.2			--

- Notes:
- = Not applicable/not analyzed.
 - mg/kg = Milligrams per kilogram.
 - µg/kg = Micrograms per kilogram.
 - J = The result is an estimated quantity.
 - U= Undetected at the method detection limit shown.
 - UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
 - JSCS Screening Level = Portland Harbor Joint Source Control Strategy: Table 3-1, revision date 7/16/07.
 - SLV = Screening Level Value.

Table 22
Riverbank Surface Sample Results - Leachable Metals
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	S2-2		S2-7		S2-10	
				Date	9/24/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010
				Result	Flag	Result	Flag	Result	Flag
Inorganics	Arsenic	mg/L	TCLP Metals 1311/6000/7000	0.0354		0.00600	J	0.00130	U
	Barium	mg/L	TCLP Metals 1311/6000/7000	0.802		0.889		2.35	
	Chromium	mg/L	TCLP Metals 1311/6000/7000	0.0135	J	0.00840	U	0.00840	U
	Copper	mg/L	TCLP Metals 1311/6000/7000	0.845		0.378		2.96	
	Lead	mg/L	TCLP Metals 1311/6000/7000	0.121		0.0228		0.00850	J
	Manganese	mg/L	TCLP Metals 1311/6000/7000	3.920		5.09		3.02	
	Nickel	mg/L	TCLP Metals 1311/6000/7000	0.0852		0.0569		0.0549	
	Selenium	mg/L	TCLP Metals 1311/6000/7000	0.000900	U	0.000900	U	0.000900	U
	Silver	mg/L	TCLP Metals 1311/6000/7000	0.000200	U	0.000200	U	0.000200	U
	Zinc	mg/L	TCLP Metals 1311/6000/7000	21.9		12.4		193	

Notes:

1. RCRA TCLP Threshold = Resource Conservation and Recovery Act Toxicity Characteristic Leaching Procedure Threshold for Total Metals.
2. mg/L = Milligrams per liter.
3. J = The result is an estimated quantity.
4. U = Undetected at the method detection limit shown.

Table 23
Riverbank Composite Sample Results - Vector 2.7
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.7 Composite Samples									JSCS Screening Levels
				092210-2-2.7- Composite-11-FS			092210-2-2.7- Composite-12-Total			110110-2-2.7- Composite-01-WS			
				Surface/Boring Composite			Surface Composite			Surface Composite			
				Date			9/22/2010			9/22/2010			
Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance					
Inorganics	Mercury	mg/kg	EPA 7471A	--			--			0.0379	J		0.07
	Arsenic	mg/kg	EPA 6020	--			--			6.53			7
	Barium	mg/kg	EPA 6020	--			--			182	J		--
	Chromium	mg/kg	EPA 6020	--			--			26.3	J		111
	Copper	mg/kg	EPA 6020	--			--			234		1.6	149
	Lead	mg/kg	EPA 6020	--			--			61.5	J	3.6	17
	Manganese	mg/kg	EPA 6020	--			--			1,120		1.0	1,100
	Nickel	mg/kg	EPA 6020	--			--			14.2			48.6
	Selenium	mg/kg	EPA 6020	--			--			0.155	J		2.0
	Silver	mg/kg	EPA 6020	--			--			0.258	J		5
Zinc	mg/kg	EPA 6020	--			--			787		1.7	459	
PCBs	Aroclor 1016	µg/kg	EPA 8082	--			--			2.2	U		530
	Aroclor 1221	µg/kg	EPA 8082	--			--			4.39	U		--
	Aroclor 1232	µg/kg	EPA 8082	--			--			2.2	U		--
	Aroclor 1242	µg/kg	EPA 8082	--			--			2.2	U		--
	Aroclor 1248	µg/kg	EPA 8082	--			--			2.2	U		1,500
	Aroclor 1254	µg/kg	EPA 8082	--			--			2.2	U		300
	Aroclor 1260	µg/kg	EPA 8082	--			--			34.7	J		200
	Aroclor 1262	µg/kg	EPA 8082	--			--			2.2	U		--
	Aroclor 1268	µg/kg	EPA 8082	--			--			2.2	U		--
	Total PCBs	µg/kg	EPA 8082	--			--			34.7	J	89.0	0.39
VOCs	1,1,1,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--			12.1	U		--
	1,1,1-Trichloroethane	µg/kg	EPA 8260B	--			--			6.52	U		--
	1,1,1,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--			14.7	U		--
	1,1,2-Trichloroethane	µg/kg	EPA 8260B	--			--			8.78	U		--
	1,1-Dichloroethane	µg/kg	EPA 8260B	--			--			8.69	U		--
	1,1-Dichloroethene	µg/kg	EPA 8260B	--			--			15.5	U		--
	1,1-Dichloropropene	µg/kg	EPA 8260B	--			--			10.2	U		--
	1,2,3-Trichlorobenzene	µg/kg	EPA 8260B	--			--			12.1	U		--
	1,2,3-Trichloropropane	µg/kg	EPA 8260B	--			--			8.37	U		--
	1,2,4-Trichlorobenzene	µg/kg	EPA 8260B	--			--			18.0	U		9,200
	1,2,4-Trimethylbenzene	µg/kg	EPA 8260B	--			--			19.1	U		--
	1,2-Dibromo-3-chloropropane	µg/kg	EPA 8260B	--			--			53.4	U		--
	1,2-Dibromoethane	µg/kg	EPA 8260B	--			--			13.5	U		--
	1,2-Dichlorobenzene	µg/kg	EPA 8260B	--			--			10.1	U		1,700
	1,2-Dichloroethane	µg/kg	EPA 8260B	--			--			9.8	U		--
	1,2-Dichloropropane	µg/kg	EPA 8260B	--			--			8.69	U		--
	1,3,5-Trimethylbenzene	µg/kg	EPA 8260B	--			--			14.2	J		--
	1,3-Dichlorobenzene	µg/kg	EPA 8260B	--			--			8.08	U		300
	1,3-Dichloropropane	µg/kg	EPA 8260B	--			--			8.6	U		--
	1,4-Dichlorobenzene	µg/kg	EPA 8260B	--			--			10.9	U		300
	2,2-Dichloropropane	µg/kg	EPA 8260B	--			--			8.14	U		--
	2-Butanone	µg/kg	EPA 8260B	--			--			32.9	U		--
	2-Chlorotoluene	µg/kg	EPA 8260B	--			--			7.68	U		--
	2-Hexanone	µg/kg	EPA 8260B	--			--			36.6	U		--
	4-Chlorotoluene	µg/kg	EPA 8260B	--			--			5.61	U		--
	4-Methyl-2-pentanone	µg/kg	EPA 8260B	--			--			24.7	U		--
	Acetone	µg/kg	EPA 8260B	--			--			777	U		--
Benzene	µg/kg	EPA 8260B	--			--			5.47	U		--	
Bromobenzene	µg/kg	EPA 8260B	--			--			16.2	U		--	
Bromochloromethane	µg/kg	EPA 8260B	--			--			12.6	U		--	
Bromodichloromethane	µg/kg	EPA 8260B	--			--			13.2	UJ		--	
Bromoform	µg/kg	EPA 8260B	--			--			11.9	U		--	
Bromomethane	µg/kg	EPA 8260B	--			--			10.4	U		--	

Please refer to notes at end of table.

Table 23
Riverbank Composite Sample Results - Vector 2.7
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.7 Composite Samples									JSCS Screening Levels
				092210-2-2.7- Composite-11-FS			092210-2-2.7- Composite-12-Total			110110-2-2.7- Composite-01-WS			
				Surface/Boring Composite			Surface Composite			Surface Composite			
				Date			9/22/2010			9/22/2010			
Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance					
VOCs (continued)	Carbon disulfide	µg/kq	EPA 8260B	--			--			9.3	U	--	
	Carbon tetrachloride	µg/kq	EPA 8260B	--			--			14.2	U	--	
	Chlorobenzene	µg/kq	EPA 8260B	--			--			3.97	U	--	
	Chloroethane	µg/kq	EPA 8260B	--			--			23.9	U	--	
	Chloroform	µg/kg	EPA 8260B	--			--			7.04	U	--	
	Chloromethane	µg/kq	EPA 8260B	--			--			9.04	U	--	
	cis-1,2-Dichloroethene	µg/kq	EPA 8260B	--			--			14	U	--	
	cis-1,3-Dichloropropene	µg/kq	EPA 8260B	--			--			5.95	U	--	
	Dibromochloromethane	µg/kq	EPA 8260B	--			--			9.6	U	--	
	Dibromomethane	µg/kq	EPA 8260B	--			--			6.14	U	--	
	Dichlorodifluoromethane	µg/kq	EPA 8260B	--			--			9.3	U	--	
	Ethylbenzene	µg/kq	EPA 8260B	--			--			3.66	U	--	
	Hexachlorobutadiene	µg/kq	EPA 8260B	--			--			11.5	U	--	
	Isopropylbenzene	µg/kq	EPA 8260B	--			--			9.6	U	--	
	m,p-Xylene	µg/kq	EPA 8260B	--			--			23	U	--	
	Methyl tert-butyl ether	µg/kq	EPA 8260B	--			--			7.04	U	--	
	Methylene chloride	µg/kq	EPA 8260B	--			--			29.8	J	--	
	Naphthalene	µg/kq	EPA 8260B	--			--			9.96	U	--	
	n-Butylbenzene	µg/kq	EPA 8260B	--			--			8.28	U	--	
	n-Propylbenzene	µg/kq	EPA 8260B	--			--			9.09	U	--	
	o-Xylene	µg/kq	EPA 8260B	--			--			8.37	U	--	
	p-Isopropyltoluene	µg/kg	EPA 8260B	--			--			12.5	U	--	
	sec-Butylbenzene	µg/kq	EPA 8260B	--			--			6.58	U	--	
Styrene	µg/kq	EPA 8260B	--			--			4.06	U	--		
tert-Butylbenzene	µg/kq	EPA 8260B	--			--			12.6	U	--		
Tetrachloroethene	µg/kq	EPA 8260B	--			--			18.6	U	500		
Toluene	µg/kq	EPA 8260B	--			--			4.53	U	--		
trans-1,2-Dichloroethene	µg/kq	EPA 8260B	--			--			7.58	U	--		
trans-1,3-Dichloropropene	µg/kq	EPA 8260B	--			--			7.58	U	--		
Trichloroethene	µg/kg	EPA 8260B	--			--			9.39	U	2100		
Trichlorofluoromethane	µg/kq	EPA 8260B	--			--			40.2	U	--		
Vinyl chloride	µg/kq	EPA 8260B	--			--			9.68	UJ	--		
SVOCs, PAHs, Phthalates	1,2,4-Trichlorobenzene	µg/kq	EPA 8270C	--			1,510	U		664	U	--	
	1,2-Dichlorobenzene	µg/kq	EPA 8270C	--			1,510	U		664	U	1,700	
	1,3-Dichlorobenzene	µg/kq	EPA 8270C	--			1,510	U		664	U	300	
	1,4-Dichlorobenzene	µg/kq	EPA 8270C	--			1,510	U		664	U	300	
	2,4,5-Trichlorophenol	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	2,4,6-Trichlorophenol	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	2,4-Dichlorophenol	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	2,4-Dimethylphenol	µg/kq	EPA 8270C	--			1,510	U		664	U	--	
	2,4-Dinitrophenol	µg/kq	EPA 8270C	--			6,020	U		2,650	U	--	
	2,4-Dinitrotoluene	µg/kq	EPA 8270C	--			1,510	U		664	U	--	
	2,6-Dinitrotoluene	µg/kq	EPA 8270C	--			1,510	U		664	U	--	
	2-Chloronaphthalene	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	2-Chlorophenol	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	2-Methylnaphthalene	µg/kq	EPA 8270M	--			211	U		7.15	J	--	
	2-Methylphenol	µg/kg	EPA 8270C	--			211	U		92.9	U	--	
	2-Nitroaniline	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	2-Nitrophenol	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	3,3'-Dichlorobenzidine	µg/kq	EPA 8270C	--			1,510	U		664	U	--	
	3,4-Methylphenol	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	3-Nitroaniline	µg/kq	EPA 8270C	--			1,510	U		664	U	--	
	4,6-Dinitro-2-methylphenol	µg/kq	EPA 8270C	--			1,510	U		664	U	--	
	4-Bromophenyl phenyl ether	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	4-Chloro-3-methylphenol	µg/kg	EPA 8270C	--			211	U		92.9	U	--	
	4-Chloroaniline	µg/kq	EPA 8270C	--			497	U		219	U	--	
	4-Chlorophenyl phenyl ether	µg/kq	EPA 8270C	--			301	U		133	U	--	
	4-Nitroaniline	µg/kq	EPA 8270C	--			211	U		92.9	U	--	
	4-Nitrophenol	µg/kq	EPA 8270C	--			183	UJ		32.9	U	--	
	Acenaphthene	µg/kq	EPA 8270M	--			211	U		23.6		300	
	Acenaphthylene	µg/kq	EPA 8270M	--			211	U		6.63	J	200	
	Anthracene	µg/kq	EPA 8270M	--			211	U		31.4		845	
Benzo(a)anthracene	µg/kq	EPA 8270M	--			211	U		139		1050		
Benzo(a)pyrene	µg/kq	EPA 8270M	--			255	J		196		1450		
Benzo(b)fluoranthene	µg/kq	EPA 8270M	--			565	J		253		--		
Benzo(ghi)perylene	µg/kq	EPA 8270M	--			211	U		169		300		
Benzo(k)fluoranthene	µg/kq	EPA 8270M	--			366	J		191		13000		

Please refer to notes at end of table.

Table 23
Riverbank Composite Sample Results - Vector 2.7
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.7 Composite Samples									JSCS Screening Levels
				092210-2-2.7- Composite-11-FS			092210-2-2.7- Composite-12-Total			110110-2-2.7- Composite-01-WS			
				Surface/Boring Composite			Surface Composite			Surface Composite			
				Date			9/22/2010			9/22/2010			
Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance					
SVOCs, PAHs, Phthalates (continued)	Benzoic Acid	µg/kg	EPA 8270C	--			1,510	U		664	U		--
	Benzyl Alcohol	µg/kg	EPA 8270C	--			3,010	U		1,330	U		--
	Bis(2-chloroethoxy)methane	µg/kg	EPA 8270C	--			211	U		92.9	U		--
	Bis(2-chloroethyl)ether	µg/kg	EPA 8270C	--			211	U		92.9	U		--
	Bis(2-chloroisopropyl)ether	µg/kg	EPA 8270C	--			211	U		92.9	U		--
	Bis(2-ethylhexyl)phthalate	µg/kg	EPA 8270M	--			6,020	U		816	J	2.5	330
	Butyl benzyl phthalate	µg/kg	EPA 8270M	--			211	U		32.9	J		--
	Chrysene	µg/kg	EPA 8270M	--			350	J		201			1290
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	--			211	U		44.0			1300
	Dibenzofuran	µg/kg	EPA 8270C	--			211	U		92.9	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	--			602	J	1.0	229	J		600
	Dimethyl phthalate	µg/kg	EPA 8270M	--			211	U		17.7	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	--			1,510	U		206		3.4	60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	--			211	U		17.7	U		--
	Fluoranthene	µg/kg	EPA 8270M	--			358	J		404			2230
	Fluorene	µg/kg	EPA 8270M	--			211	U		23.3			536
	Hexachlorobenzene	µg/kg	EPA 8270C	--			211	U		92.9	U		19
	Hexachlorobutadiene	µg/kg	EPA 8270C	--			1,510	U		664	U		600
	Hexachlorocyclopentadiene	µg/kg	EPA 8270C	--			1,510	U		664	U		400
	Hexachloroethane	µg/kg	EPA 8270C	--			1,510	U		664	U		--
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	--			211	U		153		1.5	100
	Isophorone	µg/kg	EPA 8270C	--			211	U		92.9	U		--
	Naphthalene	µg/kg	EPA 8270M	--			211	U		8.49	U		561
Nitrobenzene	µg/kg	EPA 8270C	--			211	U		92.9	U		--	
N-Nitrosodi-n-propylamine	µg/kg	EPA 8270C	--			211	U		92.9	U		--	
N-Nitrosodiphenylamine	µg/kg	EPA 8270C	--			211	U		92.9	U		--	
Pentachlorophenol	µg/kg	EPA 8270C	--			183	U		664	U		250	
Phenanthrene	µg/kg	EPA 8270M	--			259	J		278			1170	
Phenol	µg/kg	EPA 8270C	--			211	U		92.9	U		50	
Pyrene	µg/kg	EPA 8270M	--			300	J		366	J		1520	
Organotins	Dibutyltin	µg/kg	PSEP	--			--			53			--
	Monobutyltin	µg/kg	PSEP	--			--			26			--
	Tetra-n-butyltin	µg/kg	PSEP	--			--			1.4	U		--
	Tributyltin	µg/kg	PSEP	--			--			130		56.5	2.3
Organochlorine Pesticides	4,4'-DDD	µg/kg	EPA 8081A	5.63		17.1	3.05	U		0.870	U		0.33
	4,4'-DDE	µg/kg	EPA 8081A	2.81		8.5	2.04	U		0.870	U		0.33
	4,4'-DDT	µg/kg	EPA 8081A	8.65	U		10.2	U		3.53	U		0.33
	Aldrin	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	UJ		40
	alpha-BHC	µg/kg	EPA 8081A	0.852	U		2.04	U		0.870	U		--
	alpha-Chlordane	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	beta-BHC	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	Chlordane	µg/kg	EPA 8081A	19.4	U		22.9	U		19.8	U		0.37
	delta-BHC	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	Dieldrin	µg/kg	EPA 8081A	1.52	J	187.7	1.01	U		0.870	U		0.0081
	Endosulfan I	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	Endosulfan II	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	Endosulfan sulfate	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	Endrin	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	UJ		207
	Endrin aldehyde	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	Endrin ketone	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		--
	gamma-BHC (Lindane)	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		4.99
	gamma-Chlordane	µg/kg	EPA 8081A	1.32	U		1.01	U		0.870	U		--
Heptachlor	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		10	
Heptachlor epoxide	µg/kg	EPA 8081A	0.852	U		1.01	U		0.870	U		16	
Methoxychlor	µg/kg	EPA 8081A	4.26	U		2.04	U		0.870	U		--	
Toxaphene	µg/kg	EPA 8081A	25.8	U		30.5	U		26.4	U		--	
Chlorinated Herbicides	2,4,5-T	µg/kg	EPA 8151A	161	UJ		183	U		32.9	U		--
	2,4,5-TP (Silvex)	µg/kg	EPA 8151A	103	UJ		94.3	U		16.9	U		--
	2,4-D	µg/kg	EPA 8151A	326	UJ		370	U		66.5	U		--
	2,4-DB	µg/kg	EPA 8151A	326	UJ		370	U		66.5	U		--
	4-Nitrophenol	µg/kg	EPA 8151A	161	UJ		183	UJ		32.9	U		--
	Dalapon	µg/kg	EPA 8151A	816	UJ		926	U		166	U		--
	Dicamba	µg/kg	EPA 8151A	161	UJ		183	U		32.9	U		--
	Dichlorprop	µg/kg	EPA 8151A	326	UJ		370	U		66.5	U		--
	Dinoseb	µg/kg	EPA 8151A	326	UJ		370	U		66.5	U		--
	MCPA	µg/kg	EPA 8151A	16,300	UJ		18,500	U		3,320	U		--
	MCPP	µg/kg	EPA 8151A	16,300	UJ		18,500	U		3,320	UJ		--
	Pentachlorophenol	µg/kg	EPA 8151A	161	UJ		183	U		32.9	U		259.00
Picloram	µg/kg	EPA 8151A	161	UJ		183	U		32.9	U		--	

Please refer to notes at end of table.

Table 23
Riverbank Composite Sample Results - Vector 2.7
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.7 Composite Samples									JSCS Screening Levels
				092210-2-2.7- Composite-11-FS			092210-2-2.7- Composite-12-Total			110110-2-2.7- Composite-01-WS			
				Surface/Boring Composite			Surface Composite			Surface Composite			
				Date			9/22/2010			9/22/2010			
Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance					
Dioxins/Furans	1,2,3,4,6,7,8-HpCDD	pg/a	EPA 8290	--			--			160			690
	1,2,3,4,6,7,8-HpCDF	pg/a	EPA 8290	--			--			25			690
	1,2,3,4,7,8,9-HpCDF	pg/a	EPA 8290	--			--			2.9	J		690
	1,2,3,4,7,8-HxCDD	pg/a	EPA 8290	--			--			1.6	J		--
	1,2,3,4,7,8-HxCDF	pg/g	EPA 8290	--			--			4	J	1.5	2.7
	1,2,3,6,7,8-HxCDD	pg/a	EPA 8290	--			--			5.4			--
	1,2,3,6,7,8-HxCDF	pg/a	EPA 8290	--			--			1.9	J		2.7
	1,2,3,7,8,9-HxCDD	pg/a	EPA 8290	--			--			3.4	J		--
	1,2,3,7,8,9-HxCDF	pg/a	EPA 8290	--			--			0.18	J		2.7
	1,2,3,7,8-PeCDD	pg/a	EPA 8290	--			--			1.1	J		2.6
	1,2,3,7,8-PeCDF	pg/a	EPA 8290	--			--			0.94	J		2.6
	2,3,4,6,7,8-HxCDF	pg/a	EPA 8290	--			--			1.5	J		2.7
	2,3,4,7,8-PeCDF	pg/a	EPA 8290	--			--			2	J	66.7	0.03
	2,3,7,8-TCDD	pg/a	EPA 8290	--			--			0.26	J	28.6	0.0091
	2,3,7,8-TCDF	pg/a	EPA 8290	--			--			2.4		3.1	0.77
	OCDD	pg/a	EPA 8290	--			--			1,400			23000
	OCDF	pg/a	EPA 8290	--			--			99			23000
	Total HpCDD	pg/a	EPA 8290	--			--			300			--
	Total HpCDF	pg/a	EPA 8290	--			--			86			--
	Total HxCDD	pg/a	EPA 8290	--			--			38			--
Total HxCDF	pg/a	EPA 8290	--			--			39			--	
Total PeCDD	pg/g	EPA 8290	--			--			5.7			--	
Total PeCDF	pg/a	EPA 8290	--			--			17			--	
Total TCDD	pg/a	EPA 8290	--			--			2.2			--	
Total TCDF	pg/a	EPA 8290	--			--			15			--	
Petroleum Hydrocarbons	Diesel	mq/kg	NWTPH-Dx	--			--			3.01	J		--
	Heavy Oil	mq/kg	NWTPH-Dx	--			--			10.7	J		--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- pg/g = Picograms per gram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy: Table 3-1, revision date 7/16/07
- SLV = Screening Level Value.

Table 24
Riverbank Composite Sample Results - Vector 2.8
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.8 Composite Samples									JSCS Screening Levels
				102610-2-2.8- Composite-06			092110-2-2.8- Composite-07-WS			092110-2-2.8- Composite-08-Total			
				Boring Composite			Boring/Surface Composite			Surface Composite			
				Date			10/26/2010			9/22/2010			
Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance					
SVOCs, PAHs, Phthalates	Chrysene	µg/kg	EPA 8270M	--			--			88.8	U		1290
	Dibenzo(a,h)anthracene	µg/kg	EPA 8270M	--			--			88.8	U		1300
	Dibenzofuran	µg/kg	EPA 8270C	--			--			88.8	U		--
	Diethyl phthalate	µg/kg	EPA 8270M	--			--			88.8	U		600
	Dimethyl phthalate	µg/kg	EPA 8270M	--			--			88.8	U		--
	Di-n-butyl phthalate	µg/kg	EPA 8270M	--			--			634	U		60
	Di-n-octyl phthalate	µg/kg	EPA 8270M	--			--			634	U		--
	Fluoranthene	µg/kg	EPA 8270M	--			--			88.8	U		2230
	Fluorene	µg/kg	EPA 8270M	--			--			88.8	U		536
	Hexachlorobenzene	µg/kg	EPA 8270C	--			--			88.8	U		19
	Hexachlorobutadiene	µg/kg	EPA 8270C	--			--			634	U		600
	Hexachlorocyclopentadiene	µg/kg	EPA 8270C	--			--			634	U		400
	Hexachloroethane	µg/kg	EPA 8270C	--			--			634	U		--
	Indeno(1,2,3-cd)pyrene	µg/kg	EPA 8270M	--			--			88.8	U		100
	Isophorone	µg/kg	EPA 8270C	--			--			88.8	U		--
	Naphthalene	µg/kg	EPA 8270M	--			--			88.8	U		561
	Nitrobenzene	µg/kg	EPA 8270C	--			--			88.8	U		--
	N-Nitrosodi-n-propylamine	µg/kg	EPA 8270C	--			--			88.8	U		--
	N-Nitrosodiphenylamine	µg/kg	EPA 8270C	--			--			88.8	U		--
	Pentachlorophenol	µg/kg	EPA 8270C	--			--			634	U		250
Phenanthrene	µg/kg	EPA 8270M	--			--			88.8	U		1170	
Phenol	µg/kg	EPA 8270C	--			--			88.8	U		50	
Pyrene	µg/kg	EPA 8270M	--			--			88.8	U		1520	
Dioxins/Furans	1,2,3,4,6,7,8-HpCDD	pg/q	EPA 8290	190			1.8	J		35			690
	1,2,3,4,6,7,8-HpCDF	pg/q	EPA 8290	80			0.64	J		7.3			690
	1,2,3,4,7,8,9-HpCDF	pg/q	EPA 8290	3.8	J		0.25	U		0.43	J		690
	1,2,3,4,7,8-HxCDD	pg/q	EPA 8290	0.61	J		0.16	U		0.78	J		--
	1,2,3,4,7,8-HxCDF	pg/q	EPA 8290	3.2	J	1.2	0.19	J		0.55	J		2.7
	1,2,3,6,7,8-HxCDD	pg/q	EPA 8290	7			0.23	J		1.8	J		--
	1,2,3,6,7,8-HxCDF	pg/q	EPA 8290	2.2	J		0.12	U		0.4	U		2.7
	1,2,3,7,8,9-HxCDD	pg/q	EPA 8290	3.5	J		0.15	J		1.1	J		--
	1,2,3,7,8,9-HxCDF	pg/q	EPA 8290	0.13	U		0.13	U		0.51	U		2.7
	1,2,3,7,8-PeCDD	pg/q	EPA 8290	1.5	J		0.14	U		0.39	U		2.6
	1,2,3,7,8-PeCDF	pg/q	EPA 8290	0.82	J		0.16	U		0.73	U		2.6
	2,3,4,6,7,8-HxCDF	pg/q	EPA 8290	1.2	J		0.13	U		0.44	U		2.7
	2,3,4,7,8-PeCDF	pg/q	EPA 8290	1.2	J	40.0	0.16	U		0.75	U		0.03
	2,3,7,8-TCDD	pg/q	EPA 8290	2.4		263.7	0.11	U		0.15	U		0.0091
	2,3,7,8-TCDF	pg/q	EPA 8290	1.1	J	1.4	0.29	J		0.92	J	1.2	0.77
	OCDD	pg/q	EPA 8290	2,200	J		16			330			23000
	OCDF	pg/g	EPA 8290	360			1	J		15			23000
	Total HpCDD	pg/a	EPA 8290	400			3.4			70			--
	Total HpCDF	pg/a	EPA 8290	320			1.2			21			--
	Total HxCDD	pg/a	EPA 8290	52			0.47			15			--
Total HxCDF	pg/a	EPA 8290	79			0.19			9			--	
Total PeCDD	pg/a	EPA 8290	18			0.43	U		0.5			--	
Total PeCDF	pg/a	EPA 8290	34			0.23	U		1.8			--	
Total TCDD	pg/a	EPA 8290	21			0.27			0.44			--	
Total TCDF	pg/a	EPA 8290	27			0.46			0.92			--	
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	--			--			--			--
	Heavy Oil	mg/kg	NWTPH-Dx	--			--			--			--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- pg/g = Picograms per gram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.

Table 25
Riverbank Composite Sample Results - Vectors 2.9 and 2.10
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.9 Composite Samples									Vector 2.10 Composite Samples									JSCS Screening Levels
				092110-2-2.9- Composite-12-WS			092110-2-2.9- Composite-13-Total			110110-2-2.9- Composite-02-WS			102610-2-2.10- Composite			092210-2-2.10- Composite-12-FS			092210-2-2.10- Composite-13-Total			
				Surface/Boring Composite			Surface Composite			Surface Composite			Surface/Boring Composite			Surface Composite			Surface Composite			
				Date	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	
Inorganics	Mercury	mg/kg	EPA 7471A	--			--			0.0363	J		--			--			0.07			
	Arsenic	mg/kg	EPA 6020	--			--			11.6		1.7	--			--			7			
	Barium	mg/kg	EPA 6020	--			--			300			--			--			--			
	Chromium	mg/kg	EPA 6020	--			--			51.9			--			--			111			
	Copper	mg/kg	EPA 6020	--			--			1,020		6.8	--			--			149			
	Lead	mg/kg	EPA 6020	--			--			70.6		4.2	--			--			17			
	Manganese	mg/kg	EPA 6020	--			--			1,630		1.5	--			--			1,100			
	Nickel	mg/kg	EPA 6020	--			--			35.3			--			--			48.6			
	Selenium	mg/kg	EPA 6020	--			--			0.290	J		--			--			2.0			
	Silver	mg/kg	EPA 6020	--			--			0.533	J		--			--			5			
Zinc	mg/kg	EPA 6020	--			--			1,880		4.1	--			--			459				
PCBs	Aroclor 1016	µg/kg	EPA 8082	--			--			2.25	U		--			--			530			
	Aroclor 1221	µg/kg	EPA 8082	--			--			4.48	U		--			--			--			
	Aroclor 1232	µg/kg	EPA 8082	--			--			2.25	U		--			--			--			
	Aroclor 1242	µg/kg	EPA 8082	--			--			2.25	U		--			--			--			
	Aroclor 1248	µg/kg	EPA 8082	--			--			2.25	U		--			--			1,500			
	Aroclor 1254	µg/kg	EPA 8082	--			--			2.25	U		--			--			300			
	Aroclor 1260	µg/kg	EPA 8082	--			--			22.2	U		--			--			200			
	Aroclor 1262	µg/kg	EPA 8082	--			--			2.25	U		--			--			--			
	Aroclor 1268	µg/kg	EPA 8082	--			--			2.25	U		--			--			--			
Total PCBs	µg/kg	EPA 8082	--			--			22.2	U	56.9	--			--			0.39				
VOCs	1,1,1,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--			12.5	U		--			--			--			
	1,1,1-Trichloroethane	µg/kg	EPA 8260B	--			--			6.77	U		--			--			--			
	1,1,2,2-Tetrachloroethane	µg/kg	EPA 8260B	--			--			15.3	U		--			--			--			
	1,1,2-Trichloroethane	µg/kg	EPA 8260B	--			--			9.12	U		--			--			--			
	1,1-Dichloroethane	µg/kg	EPA 8260B	--			--			9.02	U		--			--			--			
	1,1-Dichloroethene	µg/kg	EPA 8260B	--			--			16.1	U		--			--			--			
	1,1-Dichloropropene	µg/kg	EPA 8260B	--			--			10.6	U		--			--			--			
	1,2,3-Trichlorobenzene	µg/kg	EPA 8260B	--			--			12.6	U		--			--			--			
	1,2,3-Trichloropropane	µg/kg	EPA 8260B	--			--			8.69	U		--			--			--			
	1,2,4-Trichlorobenzene	µg/kg	EPA 8260B	--			--			674	U		--			--			9,200			
	1,2,4-Trimethylbenzene	µg/kg	EPA 8260B	--			--			22.8	J		--			--			--			
	1,2-Dibromo-3-chloropropane	µg/kg	EPA 8260B	--			--			55.5	U		--			--			--			
	1,2-Dibromoethane	µg/kg	EPA 8260B	--			--			14.0	U		--			--			--			
	1,2-Dichlorobenzene	µg/kg	EPA 8260B	--			--			674	U		--			--			1,700			
	1,2-Dichloroethane	µg/kg	EPA 8260B	--			--			10.2	U		--			--			--			
	1,2-Dichloropropane	µg/kg	EPA 8260B	--			--			9.02	U		--			--			--			
	1,3,5-Trimethylbenzene	µg/kg	EPA 8260B	--			--			24.2	J		--			--			--			
	1,3-Dichlorobenzene	µg/kg	EPA 8260B	--			--			674	U		--			--			300			
	1,3-Dichloropropane	µg/kg	EPA 8260B	--			--			8.93	U		--			--			--			
	1,4-Dichlorobenzene	µg/kg	EPA 8260B	--			--			674	U		--			--			300			
	2,2-Dichloropropane	µg/kg	EPA 8260B	--			--			8.45	U		--			--			--			
	2-Butanone	µg/kg	EPA 8260B	--			--			34.1	U		--			--			--			
	2-Chlorotoluene	µg/kg	EPA 8260B	--			--			7.98	U		--			--			--			
	2-Hexanone	µg/kg	EPA 8260B	--			--			38.0	U		--			--			--			
	4-Chlorotoluene	µg/kg	EPA 8260B	--			--			5.83	U		--			--			--			
	4-Methyl-2-pentanone	µg/kg	EPA 8260B	--			--			25.6	U		--			--			--			
	Acetone	µg/kg	EPA 8260B	--			--			807	U		--			--			--			
	Benzene	µg/kg	EPA 8260B	--			--			5.68	U		--			--			--			
	Bromobenzene	µg/kg	EPA 8260B	--			--			16.8	U		--			--			--			
	Bromochloromethane	µg/kg	EPA 8260B	--			--			13.1	U		--			--			--			
	Bromodichloromethane	µg/kg	EPA 8260B	--			--			13.7	U		--			--			--			
	Bromoform	µg/kg	EPA 8260B	--			--			12.4	U		--			--			--			
	Bromomethane	µg/kg	EPA 8260B	--			--			10.8	U		--			--			--			
Carbon disulfide	µg/kg	EPA 8260B	--			--			9.65	U		--			--			--				
Carbon tetrachloride	µg/kg	EPA 8260B	--			--			14.8	U		--			--			--				
Chlorobenzene	µg/kg	EPA 8260B	--			--			4.12	U		--			--			--				
Chloroethane	µg/kg	EPA 8260B	--			--			24.8	U		--			--			--				
Chloroform	µg/kg	EPA 8260B	--			--			7.31	U		--			--			--				
Chloromethane	µg/kg	EPA 8260B	--			--			9.39	U		--			--			--				

Please refer to notes at end of table.

Table 25
Riverbank Composite Sample Results - Vectors 2.9 and 2.10
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.9 Composite Samples									Vector 2.10 Composite Samples									JSCS Screening Levels
				092110-2-2.9- Composite-12-WS			092110-2-2.9- Composite-13-Total			110110-2-2.9- Composite-02-WS			102610-2-2.10- Composite			092210-2-2.10- Composite-12-FS			092210-2-2.10- Composite-13-Total			
				Surface/Boring Composite			Surface Composite			Surface Composite			Surface/Boring Composite			Surface Composite			Surface Composite			
				Date	Result	Flag	Exceedance	Date	Result	Flag	Exceedance	Date	Result	Flag	Exceedance	Date	Result	Flag	Exceedance	Date	Result	
VOCs (continued)	cis-1,2-Dichloroethene	µg/kq	EPA 8260B	--			--			14.5	U		--			--			--			
	cis-1,3-Dichloropropene	µg/kq	EPA 8260B	--			--			6.18	U		--			--			--			
	Dibromochloromethane	µg/kq	EPA 8260B	--			--			9.96	U		--			--			--			
	Dibromomethane	µg/kq	EPA 8260B	--			--			6.38	U		--			--			--			
	Dichlorodifluoromethane	µg/kq	EPA 8260B	--			--			9.65	U		--			--			--			
	Ethylbenzene	µg/kq	EPA 8260B	--			--			3.80	U		--			--			--			
	Hexachlorobutadiene	µg/kq	EPA 8260B	--			--			674	U		--			--			--			
	Isopropylbenzene	µg/kq	EPA 8260B	--			--			9.96	U		--			--			--			
	m,p-Xylene	µg/kq	EPA 8260B	--			--			23.9	U		--			--			--			
	Methyl tert-butyl ether	µg/kq	EPA 8260B	--			--			7.31	U		--			--			--			
	Methylene chloride	µg/kq	EPA 8260B	--			--			29.5	J		--			--			--			
	Naphthalene	µg/kq	EPA 8260B	--			--			94.3	U		--			--			--			
	n-Butylbenzene	µg/kq	EPA 8260B	--			--			8.59	U		--			--			--			
	n-Propylbenzene	µg/kq	EPA 8260B	--			--			9.44	U		--			--			--			
	o-Xylene	µg/kq	EPA 8260B	--			--			8.69	U		--			--			--			
	p-Isopropyltoluene	µg/kq	EPA 8260B	--			--			13.0	U		--			--			--			
	sec-Butylbenzene	µg/kq	EPA 8260B	--			--			6.84	U		--			--			--			
	Styrene	µg/kq	EPA 8260B	--			--			4.22	U		--			--			--			
	tert-Butylbenzene	µg/kq	EPA 8260B	--			--			13.1	U		--			--			--			
	Tetrachloroethene	µg/kq	EPA 8260B	--			--			19.3	U		--			--			--			
Toluene	µg/kq	EPA 8260B	--			--			4.70	U		--			--			--				
trans-1,2-Dichloroethene	µg/kq	EPA 8260B	--			--			7.87	U		--			--			--				
trans-1,3-Dichloropropene	µg/kq	EPA 8260B	--			--			7.87	U		--			--			--				
Trichloroethene	µg/kq	EPA 8260B	--			--			9.75	U		--			--			--				
Trichlorofluoromethane	µg/kq	EPA 8260B	--			--			41.8	U		--			--			--				
Vinyl chloride	µg/kq	EPA 8260B	--			--			10.0	UJ		--			--			--				
SVOCs, PAHs, Phthalates	1,2,4-Trichlorobenzene	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	1,2-Dichlorobenzene	µg/kq	EPA 8270C	--			--			674	U		--			--			--		1,700	
	1,3-Dichlorobenzene	µg/kq	EPA 8270C	--			--			674	U		--			--			--		300	
	1,4-Dichlorobenzene	µg/kq	EPA 8270C	--			--			674	U		--			--			--		300	
	2,4,5-Trichlorophenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	2,4,6-Trichlorophenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	2,4-Dichlorophenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	2,4-Dimethylphenol	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	2,4-Dinitrophenol	µg/kq	EPA 8270C	--			--			2,700	U		--			--			--			
	2,4-Dinitrotoluene	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	2,6-Dinitrotoluene	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	2-Chloronaphthalene	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	2-Chlorophenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	2-Methylnaphthalene	µg/kq	EPA 8270M	--			--			10.6	J		--			--			--			
	2-Methylphenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	2-Nitroaniline	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	2-Nitrophenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	3,3'-Dichlorobenzidine	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	3,4-Methylphenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	3-Nitroaniline	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	4,6-Dinitro-2-methylphenol	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	4-Bromophenyl phenyl ether	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	4-Chloro-3-methylphenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	4-Chloroaniline	µg/kq	EPA 8270C	--			--			222	U		--			--			--			
	4-Chlorophenyl phenyl ether	µg/kq	EPA 8270C	--			--			135	U		--			--			--			
	4-Nitroaniline	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	4-Nitrophenol	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	Acenaphthene	µg/kq	EPA 8270M	--			--			30.1			--			--			--			
	Acenaphthylene	µg/kq	EPA 8270M	--			--			34.0			--			--			--			
	Anthracene	µg/kq	EPA 8270M	--			--			72.0			--			--			--			
	Benzo(a)anthracene	µg/kq	EPA 8270M	--			--			215			--			--			--			
	Benzo(a)pyrene	µg/kq	EPA 8270M	--			--			310			--			--			--			
	Benzo(b)fluoranthene	µg/kq	EPA 8270M	--			--			539		28.4	--			--			--		19	
	Benzo(ghi)perylene	µg/kq	EPA 8270M	--			--			302			--			--			--		600	
	Benzo(k)fluoranthene	µg/kq	EPA 8270M	--			--			338			--			--			--		400	
	Benzoic Acid	µg/kq	EPA 8270C	--			--			674	U		--			--			--			
	Benzyl Alcohol	µg/kq	EPA 8270C	--			--			1,350	U		--			--			--			
	Bis(2-chloroethoxy)methane	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	Bis(2-chloroethyl)ether	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
	Bis(2-chloroisopropyl)ether	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--			
Bis(2-ethylhexyl)phthalate	µg/kq	EPA 8270M	--			--			854		3.4	--			--			--		250		
Butyl benzyl phthalate	µg/kq	EPA 8270M	--			--			39.5			--			--			--		50		
Chrysene	µg/kq	EPA 8270M	--			--			403		2.0	--			--			--		200		
Dibenzo(a,h)anthracene	µg/kq	EPA 8270M	--			--			86.0			--			--			--		300		
Dibenzofuran	µg/kq	EPA 8270C	--			--			94.3	U		--			--			--		200		
Diethyl phthalate	µg/kq	EPA 8270M	--			--			239			--			--			--		845		
Dimethyl phthalate	µg/kq	EPA 8270M	--			--			18.1	U		--			--			--		1050		

Please refer to notes at end of table.

Table 25
Riverbank Composite Sample Results - Vectors 2.9 and 2.10
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

Group	Constituent	Units	Analytical Method	Vector 2.9 Composite Samples									Vector 2.10 Composite Samples									JSCS Screening Levels
				092110-2-2.9- Composite-12-WS			092110-2-2.9- Composite-13-Total			110110-2-2.9- Composite-02-WS			102610-2-2.10- Composite			092210-2-2.10- Composite-12-FS			092210-2-2.10- Composite-13-Total			
				Surface/Boring Composite			Surface Composite			Surface Composite			Surface/Boring Composite			Surface Composite			Surface Composite			
				Date	Result	Flag	Exceedance	Date	Result	Flag	Exceedance	Date	Result	Flag	Exceedance	Date	Result	Flag	Exceedance	Date	Result	
SVOCs, PAHs, Phthalates (continued)	Di-n-butyl phthalate	µg/kq	EPA 8270M	--			--			58.1			--			--				1450		
	Di-n-octyl phthalate	µg/kq	EPA 8270M	--			--			26.1	J		--			--				--		
	Fluoranthene	µg/kq	EPA 8270M	--			--			583		1.9	--			--				300		
	Fluorene	µg/kq	EPA 8270M	--			--			31.8			--			--				13000		
	Hexachlorobenzene	µg/kq	EPA 8270C	--			--			94.3	U		--			--				1290		
	Hexachlorobutadiene	µg/kq	EPA 8270C	--			--			674	U		--			--				1300		
	Hexachlorocyclopentadiene	µg/kq	EPA 8270C	--			--			674	U		--			--				2230		
	Hexachloroethane	µg/kq	EPA 8270C	--			--			674	U		--			--				536		
	Indeno(1,2,3-cd)pyrene	µg/kq	EPA 8270M	--			--			277		2.8	--			--				100		
	Isophorone	µg/kq	EPA 8270C	--			--			94.3	U		--			--				561		
	Naphthalene	µg/kq	EPA 8270M	--			--			44.2			--			--				1170		
	Nitrobenzene	µg/kq	EPA 8270C	--			--			94.3	U		--			--				1520		
	N-Nitrosodi-n-propylamine	µg/kq	EPA 8270C	--			--			94.3	U		--			--				330		
	N-Nitrosodiphenylamine	µg/kq	EPA 8270C	--			--			94.3	U		--			--				--		
	Pentachlorophenol	µg/kq	EPA 8270C	--			--			674	U		--			--				600		
Phenanthrene	µg/kq	EPA 8270M	--			--			323			--			--				--			
Phenol	µg/kq	EPA 8270C	--			--			94.3	U		--			--				60			
Pyrene	µg/kq	EPA 8270M	--			--			530			--			--				--			
Organotin	Dibutyltin	µg/kq	PSEP	--			--			25			--			--				--		
	Monobutyltin	µg/kq	PSEP	--			--			79			--			--				--		
	Tetra-n-butyltin	µg/kq	PSEP	--			--			1.6	U		--			--				--		
	Tributyltin	µg/kq	PSEP	--			--			110		47.8	--			--				2.3		
Organochlorine Pesticides	4,4'-DDD	µg/kq	EPA 8081A	0.781	U		0.799	U		2.70	U		--			--				0.33		
	4,4'-DDE	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				0.33		
	4,4'-DDT	µg/kq	EPA 8081A	1.59	U		1.62	U		2.70	U		--			--				0.33		
	Aldrin	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				40		
	alpha-BHC	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--		
	alpha-Chlordane	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--		
	beta-BHC	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--		
	Chlordane	µg/kq	EPA 8081A	17.8	U		18.2	U		20.2	U		--			--				0.37		
	delta-BHC	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--		
	Dieldrin	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				0.0081		
	Endosulfan I	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--		
	Endosulfan II	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--		
	Endosulfan sulfate	µg/kq	EPA 8081A	1.59	U		0.799	U		0.891	U		--			--				--		
	Endrin	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				207		
	Endrin aldehyde	µg/kq	EPA 8081A	1.59	U		0.799	U		0.891	U		--			--				--		
	Endrin ketone	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--		
	gamma-BHC (Lindane)	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				4.99		
gamma-Chlordane	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				--			
Heptachlor	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				10			
Heptachlor epoxide	µg/kq	EPA 8081A	0.781	U		0.799	U		0.891	U		--			--				16			
Methoxychlor	µg/kq	EPA 8081A	2.37	U		2.42	U		0.891	U		--			--				--			
Toxaphene	µg/kq	EPA 8081A	23.7	U		24.2	U		27.0	U		--			--				--			
Chlorinated Herbicides	2,4,5-T	µg/kq	EPA 8151A	1,600	U		163	U		32.4	U		--			--				--		
	2,4,5-TP (Silvex)	µg/kq	EPA 8151A	825	U		83.9	U		16.7	U		--			--				--		
	2,4-D	µg/kq	EPA 8151A	3,240	U		329	U		65.5	U		--			--				--		
	2,4-DB	µg/kq	EPA 8151A	3,240	U		329	U		65.5	U		--			--				--		
	4-Nitrophenol	µg/kq	EPA 8151A	1,600	UJ		163	UJ		32.4	U		--			--				--		
	Dalapon	µg/kq	EPA 8151A	8,110	U		824	U		164	U		--			--				--		
	Dicamba	µg/kq	EPA 8151A	1,600	U		163	U		32.4	U		--			--				--		
	Dichlorprop	µg/kq	EPA 8151A	3,240	U		329	U		65.5	U		--			--				--		
	Dinoseb	µg/kq	EPA 8151A	3,240	U		329	U		65.5	U		--			--				--		
	MCPA	µg/kq	EPA 8151A	162,000	U		16,400	U		3,270	U		--			--				--		
	MCPP	µg/kq	EPA 8151A	162,000	U		16,400	U		3,270	U		--			--				--		
Pentachlorophenol	µg/kq	EPA 8151A	1,600	U		163	U		32.4	U		--			--				--			
Picloram	µg/kq	EPA 8151A	1,600	U		163	U		32.4	U		--			--				--			
Dioxins/Furans	1,2,3,4,6,7,8-HpCDD	pg/a	EPA 8290	--			--			300			120			100			100	690		
	1,2,3,4,6,7,8-HpCDF	pg/a	EPA 8290	--			--			13			94			21			15	690		
	1,2,3,4,7,8,9-HpCDF	pg/a	EPA 8290	--			--			0.82	J		2.8	J		1.4	J		1.1	J	690	
	1,2,3,4,7,8-HxCDD	pg/a	EPA 8290	--			--			1.9	J		0.35	J		0.78	J		1.3	J	--	
	1,2,3,4,7,8-HxCDF	pg/a	EPA 8290	--			--			1.3	J		2.4	J		1.5	J		0.85	J	2.7	
	1,2,3,6,7,8-HxCDD	pg/a	EPA 8290	--			--			7.3			4.7			3.7			5.3		--	
	1,2,3,6,7,8-HxCDF	pg/a	EPA 8290	--			--			1.1	J		4.5	J	1.7	0.68	J		0.63	J	2.7	
	1,2,3,7,8,9-HxCDD	pg/a	EPA 8290	--			--			5			1	J		1.9	J		2.1	J	--	
	1,2,3,7,8,9-HxCDF	pg/a	EPA 8290	--			--			0.1	U		0.22	U		0.21	U		0.47	U	2.7	
	1,2,3,7,8-PeCDD	pg/a	EPA 8290	--			--			2.2	J		0.5	J		0.61	J		0.49	J	2.6	
	1,2,3,7,8-PeCDF	pg/a	EPA 8290	--			--			0.51	J		0.58	J		0.45	J		0.69	U	2.6	
	2,3,4,6,7,8-HxCDF	pg/a	EPA 8290	--			--			0.91	J		2.2	J		0.52	J		0.44	J	2.7	
	2,3,4,7,8-PeCDF	pg/a	EPA 8290	--			--			0.74	J	24.7	1.1	J	36.7	0.57	J	19.0	0.71	U	0.03	
	2,3,7,8-TCDD	pg/a	EPA 8290	--			--			0.70	J	76.9	0.27	J	29.7	1.6		175.8	0.14	U	0.0091	
	2,3,7,8-TCDF	pg/a	EPA 8290	--			--			0.75	J		0.86	J	1.1	0.48	J		0.47	J	0.77	
OCDD	pg/a	EPA 8290	--			--			2,300			1,200			1,000			910		23000		
OCDF	pg/a	EPA 8290	--			--			34			180			81			42		23000		

Please refer to notes at end of table.

Table 25
Riverbank Composite Sample Results - Vectors 2.9 and 2.10
Area 2 Supplemental Riverbank Source Control Evaluation
Gunderson LLC - Portland, Oregon

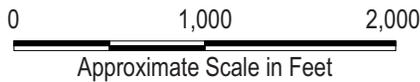
Group	Constituent	Units	Analytical Method	Vector 2.9 Composite Samples									Vector 2.10 Composite Samples									JSCS Screening Levels
				092110-2-2.9- Composite-12-WS Surface/Boring Composite			092110-2-2.9- Composite-13-Total Surface Composite			110110-2-2.9- Composite-02-WS Surface Composite			102610-2-2.10- Composite Surface/Boring Composite			092210-2-2.10- Composite-12-FS Surface Composite			092210-2-2.10- Composite-13-Total Surface Composite			
				Date: 9/22/2010			9/21/2010			11/1/2010			10/26/2010			9/22/2010			9/22/2010			
			Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance	Result	Flag	Exceedance		
Dioxins/Furans (continued)	Total HpCDD	pg/g	EPA 8290	--			--			720			240			200			200			--
	Total HpCDF	pg/g	EPA 8290	--			--			45			260			85			59			--
	Total HxCDD	pg/g	EPA 8290	--			--			84			29			25			36			--
	Total HxCDF	pg/g	EPA 8290	--			--			29			88			23			20			--
	Total PeCDD	pg/g	EPA 8290	--			--			11			7.5			3.6			2.3			--
	Total PeCDF	pg/g	EPA 8290	--			--			9.5			38			8.1			4.3			--
	Total TCDD	pg/g	EPA 8290	--			--			5.2			3.3			4			0.4			--
Petroleum Hydrocarbons	Diesel	mg/kg	NWTPH-Dx	--			--			9.41	J		--			--			--			--
	Heavy Oil	mg/kg	NWTPH-Dx	--			--			37.8			--			--			--			--

Notes:

- = Not applicable/not analyzed.
- mg/kg = Milligrams per kilogram.
- µg/kg = Micrograms per kilogram.
- pg/g = Picograms per gram.
- J = The result is an estimated quantity.
- U = Undetected at the method detection limit shown.
- UJ = Undetected at the method detection limit shown, detection limit is an estimated quantity.
- JSCS Screening Level = Portland Harbor Joint Source Control Strategy; Table 3-1, revision date 7/16/07.
- SLV = Screening Level Value.



Site



NOTE: Aerial provided by ???

2014 Aerial Photograph

Phase I Environmental Site Assessment
 Big Sky Resort - I Lone Mountain Trail
 Big Sky, Montana

 Apex Companies, LLC
 3015 SW First Avenue
 Portland, Oregon 97201

Project Number	--
August 2015	

Figure
A-6